ABSTRACT OF

An Address

ON

THE PREVENTION OF PHTHISIS, WITH SPECIAL REFERENCE TO ITS NOTIFICATION TO THE MEDICAL OFFICER OF HEALTH.

Being an Introduction to a Discussion on the Subject at a Meeting of the Incorporated Society of Medical Officers of Health on Jan. 13th, 1899,

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NATURE OF TUBERCULOSIS.

GENTLEMEN,—Our views as to tuberculosis have been fundamentally changed by the discovery of Koch's bacillus tuberculosis. Tuberculosis having been shown to be an infective disease it is natural to jump to the conclusion that it is spread by direct or indirect personal infection. This is not necessarily the case. Tetanus is an infective disease the contagion of which is widely present in the soil but it is not communicable except under the most unusual conditions. Rheumatic fever, again, is an infective disease which is ordinarily non-communicable. The evidence of such pioneers as Cornet, Niven, and Ransome and the gradually accumulating evidence of other observers makes it quite clear that under certain conditions phthisis is actively infective.

The following cases taken from my annual report for 1894 are illustrations of similar facts which although they may singly be explained as coincidences force one to the conclusion that infection is at work when we remember that similar cases occur time after time in particular houses among members of different families.

A woman, aged 40 years, died from phthisis. She had been married twice, both husbands having died before her from phthisis. The history indicated that she had probably acquired the disease from her first husband and had given it to her second husband, in whom it ran a more rapid course than in herself.

A man, aged 47 years, died from phthisis in October, 1894, after an illness of several years. His daughter who helped to nurse him died in January, 1894, from phthisis.

On Jan. 19th, 1894, a boy, aged eight years, died from phthisis, a sister having succumbed to the same disease in December, 1891. On Jan. 14th, 1894, a lodger's child, aged 12 months, who had lived in the house since his birth, died from tuberculous meningitis.

We need in the next place to differentiate between diseases which are infective to all and diseases which are infective only to a minority. Tuberculosis undoubtedly comes under the latter category. The difference in incidence of infection between tuberculosis and such diseases—such as diphtheria, enteric fever, and scarlet fever—is simply one of degree. In my own family there has been a complete immunity from scarlet fever of every member during three generations notwithstanding frequent exposures to the disease.

It is true, as urged by the late Professor Kanthack, that a preponderant proportion of the population enjoy immunity from phthisis, but an appeal to pathological anatomy shows that a very large proportion of the population dying from other diseases has in the lungs what may be described as the scars resulting from a successful fight against phthisis, while the national statistics show that between the ages of 15 and 55 years more than one-fourth of the total deaths from all causes are due to phthisis, no account being taken of other tuberculous diseases. We must set against the fact that phthisis is infective to a minority of the population only the fact that it is infective for a prolonged period. The lesser intensity of infection is probably more than counterbalanced by its longer duration. The breath of the phthisical patient being free from infection it is evident that in seeking for means of preventing the disease we must have regard to (1) the infectious discharges from the patient, especially his desiccated sputa, and (2) the personal and environmental circumstances which favour the origin of phthisis.

If we assume for a moment that the contagion of phthisis has no extra-corporeal existence it is evident that we might faintly hope to annihilate the disease by strictly isolating all phthisical patients and destroying their discharges, though our experience of such diseases as small-pox (apart from vaccination) would sober any too sanguine expectations. In practice segregation of the phthisical patient, except where it is voluntarily undertaken in the interest of the patient, is entirely out of the question. Voluntary isolation may be recommended in two directions:—

1. Of the patient himself, when the home conditions are unfavourable to his recovery, with a view to securing his cure in a well-organised sanatorium.
2. The relatives who are particularly prone to fall victims may be removed from the home in which the patient is being treated or has been treated with a great increase of the probability of their escape from the family disease.

It is well to recognise the fact that before phthisis is diagnosed the patient has commonly been expectorating myriads of tubercle bacilli and that consequently attempts to destroy infective material derived from the patient can have only a partial and limited success. This consideration has been urged as the standard argument against notification of cases of phthisis and the precautionary measures which would follow as the result of such notification. Such reasoning is somewhat short-sighted. The healthy occupants of a phthisical home may be compared to a city which is the subject of a protracted siege in which the combined effects of arms, starvation, and depressing emotion are at work. The inhabitants of such a city may escape with but little damage if the siege is raised at a comparatively early period, but they succumb if it is protracted. Similarly the healthy members of a phthisically invaded household may be able to withstand infection if precautionary measures are begun as soon as the nature of the disease is detected and are continued thereafter, but they finally fall victims to the repeated doses of infection if a fatalistic inertia is allowed to prevail and no efficient precautions are taken.

THE SAPROPHYTIC QUESTION.

The question of the possible saprophytism of the tubercle bacillus raises another range of difficulties. Ransome and others have shown that the tubercle bacillus can live on artificial media and even on wall-papers at the ordinary temperature of certain rooms. This being so, and there being presumably a large stock of tubercle bacilli in progress of development in the incubating chambers of nature, why trouble to destroy the tubercle bacilli discharged by each patient? We may, however, reasonably doubt the saprophytism of the tubercle bacillus except to the limited extent that it manages to retain a slender tenure of life under certain extremely favourable extra-corporeal conditions. The evidence of protracted saprophytism in diphtheria and enteric fever (and I believe also in scarlet fever) is much stronger than in the case of tuberculosis. And yet, although the saprophytic stage of life of the contagia of diphtheria and enteric fever indefinitely multiplies their possibilities of infectivity, these diseases remain compulsorily notifiable, nor do I anticipate that the Local Government Board will recommend their removal from the list of diseases thus notifiable.

[Dr. Newsholme then pointed out that the saprophytic bogie idea was likely to do much mischief unless relegated to its proper place. Contagion was really the source of trouble and hygienic measures must be directed towards cleanliness, light, ventilation, and against damp and access of ground air.]

It remains true, however, that the prevention of phthisis is concerned largely if not chiefly with the personal and environmental conditions which favour its origin. Now what are the chief predisposing causes of phthisis? Without attempting an exhaustive enumeration the following are probably the most important: (1) the habitual breathing of re-breathed air; (2) dusty occupations; (3) dampness and darkness of the dwelling; and (4) chronic alcoholism. The prevention of alcoholism is outside the ordinary scope of preventive medicine. Its importance, however, deserves a passing notice.

SANITARY AUTHORITIES AND PREVENTIVE MEASURES.

It will be argued that sanitary authorities (local or central) already have power under existing laws to diminish the operation of respiratory impurities and industrial dust and, possibly to a less extent, of damp and dark houses. That is a plausible opinion which will probably continue to find favour with those who have no practical experience

of local sanitary administration, but it will not bear critical study. Even supposing that there are ample legal enactments against overcrowding and dust it must be admitted that the knowledge of a case of phthisis in connexion with overcrowding or a dusty occupation will enormously strengthen our hands in securing the adoption of the necessary remedies. Many nuisances cannot now in many districts be remedied because support is not obtained from the sanitary authority or the magisterial bench. Would not a medical certificate that a case of phthisis had occurred in the house where the nuisance was found turn the balance in favour of reform?

It is not true, however, that present enactments cover the entire requirements of the case. The knowledge of cases of phthisis would give immense leverage in securing the removal of conditions of defective sanitation which we know to favour phthisis but which cannot at present be reached except by judicious persuasion. Take, for instance, the question of enforcing the provision of a staircase window where none now exists and where its absence means blocking of what ought to be the main channel of air and light to the house. In Brighton we have during 1898 secured the insertion of such staircase windows in 126 houses which were previously without them and 81 are now under notice but it would have been extremely difficult to enforce these notices had they been contested. Similar remarks will apply to the enforcement of damp-preventing structural alterations, of windows which can be opened top and bottom, and other arrangements for ventilation, and of notices to remove and destroy wall-papers in rooms where a case of phthisis has been nursed for a long time. It will be argued that information as to the above and allied defects could be obtained apart from notification of cases of phthisis in the course of the house-to-house inspection which is carried out in the majority of districts. This statement implies deficient knowledge of the conditions under which these visits are made. Even in well-organised districts a house is seldom inspected oftener than once a year and it must be evident that if we knew of a case of phthisis in a house immediate cognisance could be taken of and action adopted in respect of conditions favouring phthisis which under other circumstances would probably be delayed for many months and which might have to be entirely omitted in the present state of the education of the public. Our leverage in sanitary operations would be enormously increased if a considerable proportion of the cases of phthisis were notified. Quite apart from the adoption of special precautionary measures against infection the localisation and remedying of house defects as to cleanliness, crowding, and dampness would amply repay for all attempts at the notification of phthisis.

NOTIFICATION OF PHTHISIS.

It being obvious that a more complete knowledge of cases of phthisis would enable more complete preventive measures to be adopted it is not surprising that a number of local sanitary authorities have written to the Local Government Board for permission to add phthisis to the list of notifiable diseases. They have received the following reply which has already been made public property:—

Local Government Board, Whitehall, S.W.

To the Clerk to the District Council.

SIR,—I am directed by the Local Government Board to advert to your letter of the ..... inquiring whether they would approve an Order extending the provisions of the Infectious Disease (Notification) Act, 1889, to phthisis in the ..... District.

In reply I am to state that the Board have hitherto held the view that phthisis is not a disease to which the provisions of the above-mentioned Act could with advantage be applied and in this connexion I am to remind the District Council that many persons who would be notified to them as suffering from phthisis would be individuals whose phthisis is so little advanced that not a few of them may be expected to have many years of life in prospect, during which it will be imperative on them to gain their livelihood. I am to add that the Board do not find in the medical officer of health's report which accompanied your letter any evidence to cause them to modify that view. They therefore would not be willing to approve of the addition of phthisis to the list of diseases notifiable in the ..... District under the Act.

I am,

.....

Assistant Secretary.

It is evident from this letter that one of the chief arguments against a compulsory notification of phthisis is held to be the risk of interfering with the means of livelihood of phthisical patients. The same argument is stated in Sir Richard Thorne's Harben Lectures.[1] "It was not desirable that persons suffering from phthisis should occupy the same rooms as the healthy, but the notification of such cases in houses of business would be followed by dismissal." The two halves of this sentence are mutually destructive, but that doubtless is owing to the briefness of the abstract. Notification of disease is confidential and if the Local Government Board are afraid of its misuse they can make regulations bearing on this point. The inquiries resulting from notification would in nearly every instance be made at the patient's home, not at his place of business, and with proper provisions there need be (and would be) no interference with business. In the final analysis, if any must suffer, ought it not to be one rather than many? But I repeat that there is not the slightest necessity for anyone to suffer through notification and the medical officer of health through whose action such suffering arose would speedily find his position so uncomfortable that the indiscretion would not be repeated.[2]

Then it is stated in the abstract of the lectures above quoted that "notification of phthisis is impracticable and would tend in its results to defeat the end in view." The diseases at present notifiable "were communicable in a high degree and in many ways, but rendered the patient a source of danger for a limited period only. In phthisis not only were these conditions absent, but the patient's position was absolutely the reverse." Thus because the danger in scarlet fever is for a limited period only we must take every possible precaution against it, but the danger of phthisis being protracted we must trust to the casual precautions which the uninstructed patient or the overworked practitioner may carry out on his own initiative. Personally I should be prepared to leave the precautionary measures almost entirely to the medical attendant and his patient, with the stipulation that as medical officer of health I should be informed of each change of address of the patient in order to secure the protection of subsequent tenants of the vacated house. But it is not simply or chiefly a question of personal precautions. The above argument entirely ignores the sanitary aspect of the question. Inspections and control of the home conditions and of the industrial conditions under which phthisis has originated are of the very essence of the means of preventing phthisis. How can we exercise such control when we do not know of a tithe of the total cases and of these only when they prove fatal? The last Factory and Workshops Act contains a clause securing the compulsory notification of anthrax, phosphorus and arsenical poisoning, and of a chronic disease like lead-poisoning occurring in connexion with industries. Each of these has an annual number of victims who could almost be counted on the fingers, while thousands of the artisans of this country annually fall victims to phthisis acquired in connexion with their special work. But lead-poisoning must be notified; phthisis is ignored. The non-communicable disease must be notified; the communicable disease is left to carry out its maleficent work. Then we are told above that fevers are "communicable in a high degree and in many ways." Enteric fever, a notifiable disease, is spread almost solely by infection from the dejecta of previous enteric patients; phthisis by the dried sputa of phthisical patients. But there is the "less degree" of infectivity in the latter case. It would be an interesting arithmetical problem to find the sum total of infectivity (call it a) in the month's course of attack of enteric fever and in the from two to three years' average course of phthisis (call it b) when it pursues a fatal course. It is clear, I think, that if x represented the unknown balance on one side of the equation, probably a very large one, it would stand as follows:—

$$a + x = b.$$

Then it is stated: "A little reflection would show the impracticability of carrying out such a course of repeated visitation of hundreds and thousands of houses in large sanitary districts, where already it was found impossible for the medical officer of health to visit all the cases now notified."

[1] Summary in Public Health, December, 1898, p. 205.

[2] While writing the above I have heard of the case of a clerk who appears to have been discharged from his post because he was phthisical in connexion with the publicity recently given to the dangers arising from the sputa of such patients. If the admirable propagandism of the Association for the Prevention of Tuberculosis is to continue (and we all hope that it will) a certain amount of alarm among those imperfectly informed is inevitable. In all probability nothing would be more successful in removing this unreasonable fear—unreasonable when proper precautions are taken—than the knowledge that cases of phthisis are notified to the medical officer of health who has official charge of any necessarily precautionary measures.

It may be remarked that personal visits by the medical officer of health are not required in every case to ensure the execution of the necessary sanitary improvements and hygienic precautions. The head of a large firm does not conduct every detailed operation in his business, otherwise he would be his own clerk and messenger. But he has full control of the business; he knows its weak points and its strong points and is able to maintain control over its minutest details. Assuming that in a well-organised district each house is inspected at least once in every twelve months we ask, Is it not very desirable that the visits of a large sanitary staff shall be made once in three or four months to a minority of houses in which remedial measures against dirty rooms, overcrowding, damp, and deficient ventilation are of supreme importance, even though this may necessitate a less frequent inspection than once a year of houses the absence of phthisis from which makes such inspections less urgent? Speaking from fifteen years' experience of local sanitary administration in London and in Brighton I have no hesitation in stating my emphatic opinion that the visitation of phthisical houses in which such visits are desirable is not only perfectly practicable, but is of as great importance to the public weal as similar visits in houses where diphtheria or enteric fever has occurred. I protest against the assumption which appears to be so commonly entertained that the official work of the medical officer of health is confined to the "seven chief zymotic diseases" and that tuberculous diseases which cause 50 per cent. more deaths than the aggregate of these seven zymotic diseases and are much more capable of being prevented than are several of them are outside the sphere of his official action. Then we are informed, I hope under some misapprehension, that a distinguished physician has maintained that "the question revolves itself into that of the disposal of the sputa" and has asked "what the sanitary authority would do with the patient when notified." The answer is that so far as the patient is concerned notification need imply, and ought to imply, until experience has shown that more is really necessary, nothing beyond sending to him a precautionary circular such as the following which is used in Brighton:—

PRECAUTIONS FOR CONSUMPTIVE PERSONS.

Consumption is to a limited extent a contagious disease. It is spread chiefly by inhaling the expectoration (spit) of patients which has been allowed to become dry and float about the room as dust.

Do not spit except into receptacles the contents of which can be destroyed before they become dry.

If this simple precaution is taken there is practically no danger of injection. The breath of consumptive persons is free from infection.

The following detailed rules will be found useful both to the consumptive and to his friends:—

1. Expectoration indoors should be received into small paper bags and afterwards burnt.

2. Expectoration out-of-doors should be received into a suitable bottle, to be afterwards washed out with boiling water, or into a small paper handkerchief which is afterwards burnt.

3. If ordinary handkerchiefs are ever used for expectoration they should be put into boiling water before they have time to become dry or into some disinfectant solution to be ordered by the doctor.

4. Wet cleansing of rooms, particularly of bedrooms occupied by sick persons, should be substituted for "dusting."

5. Sunlight and fresh air are the greatest enemies of infection. Every consumptive should sleep with his bedroom window open top and bottom and during the day should occupy a well-ventilated room. Re-breathed air is the main cause favouring consumption. If the patient is warmly clad he need not fear keeping out-of-doors in any weather. N.B.—The patient himself is the greatest gainer by the above precautions as his recovery is retarded and frequently prevented by renewed infection derived from his own expectoration.

6. Persons in good health have no reason to fear the infection of consumption. Over-fatigue, intemperance, bad air, and dusty occupations favour consumption.

HOW NOTIFICATION MAY BE LIMITED.

This is all so far as the patient is concerned. If there is any fear on this point effectual legal safeguards can be devised, and I may point out that notification may be compulsorily adopted and its operation limited by Section 58 of the Public Health (London) Act, 1891, to special purposes. It is not all so far as the prevention of phthisis is concerned. The weightier matters of the prevention of phthisis deal with the home and industrial evils which have lowered vitality to such an extent that a dose of infective material which to the healthy would be innocuous has been enabled to secure a foothold and multiply in the patient's lungs. It is unfortunate that the Local Government Board is so unacquainted with local requirements that it has hitherto been unable to entertain the idea of modifications of compulsory notification and of fresh legislation if necessary giving notification for certain purposes of a strictly restricted character. I hope that ere long some local authority will apply to the Local Government Board for permission to enable them to pay practitioners for voluntary notifications of cases of phthisis supplied to them. Such voluntary notification would supply information of the cases of phthisis among the poor which are most important from a preventive standpoint. Nor is there the same objection to paying for a limited notification of phthisis that would hold for such a disease as enteric fever. The absence of complete information in a limited outbreak of enteric fever may prevent one from discovering its origin; but in phthisis every single case notified may be treated alone, and if 25 per cent. of the total cases in a district are notified we can obtain nearly if not quite 25 per cent. of the benefit which would follow in the wake of complete notification. As matters now stand any district or borough other than a county borough which paid fees for such voluntary notification would probably find the accounts disallowed by the Government auditor. It may be asked, why not be contented with the voluntary notification of phthisis? Personally I am at present satisfied with such voluntary notification, which is being made to me by medical officers of public hospitals and dispensaries and by parochial medical officers. It is, however, a hardship that they apparently cannot be paid a fee as in the case of notification of other diseases. I draw attention in this connexion to the resolution passed unanimously at the annual provincial meeting of the Society of Medical Officers of Health at Newcastle-on-Tyne in 1893:—

That the Society of Medical Officers of Health, while accepting the view that phthisis in an infective disease, in the prevention of which active hygienic measures should be taken, think it premature to recommend the compulsory notification of a chronic disease like phthisis. They are, however, of opinion that it is incumbent on medical officers of health to take such steps as may secure (*a*) the voluntary notification of cases of phthisis by medical officers of public institutions and such medical practitioners as agree that precautionary measures are desirable; (*b*) the adoption of such precautionary measures, including the disinfection of rooms, as can be arranged in conjunction with the family practitioner. For this purpose the memorandum prepared by the North-West Branch of the Incorporated Society of Medical Officers of Health would give an excellent basis of action.

I was responsible for drafting and proposing the above resolution and am contented to continue to act upon it for the present subject to phthisis being placed in the same category as other infective diseases so far as payment for certification is concerned. I venture, however, to protest against the obstructive action of the Local Government Board in not allowing such local authorities as wish for it to adopt the compulsory notification of phthisis. There should be complete local option in this respect and it is only by experiment that progress can be secured. This is not the only respect in which the Local Government Board has effectively obstructed local authorities, especially the local authorities of great towns, in their attempts to improve their sanitary enactments and administration. In former years they were content to stand neutral while the great towns secured special enactments of their own, and they subsequently adopted many of these enactments permissively in the Infectious Disease Prevention Act and the Public Health Amendment Act. Latterly they not only refuse to move themselves, but insist on everyone else sitting still. Their action is unfortunate, as the prospects of local sanitary progress at present depend upon the assent if not the coöperation of the Local Government Board. I would heartily increase the present powers of the Local Government Board, which they allow to a very large extent to remain in abeyance, for compelling local authorities to do their duty, but at the same time their power of veto on local authorities who are laudably anxious to extend their responsibilities and their utility should be removed.

It may be inquired, in conclusion, what can be done apart from compulsory notification of phthisis? Dr. Niven and Mr. C. E. Paget (and others) have made serious attempts with the machinery already available and I take this opportunity of acknowledging the magnificent pioneer work of an educational and actively preventive character which they and Dr. Ransome have done. Mr. Paget informs me, however, that during the five years 1893–97 in which voluntary disinfection after phthisis was offered in Salford only 32 houses were thus purified. We are told that one item of the programme of the Association for the Prevention of Consumption is to secure the disinfection of houses in which deaths from phthisis have occurred. The association is apparently unaware in how many towns this is already carried out. The number of rooms cleansed and purified in Brighton after deaths from phthisis has been as follows:—

Year.	No. of rooms.	Year.	No. of rooms.
1893...	56	1897...	138
1894...	64	1898...	108
1895...	57		—
1896...	150	Total in six years	573

The procedure is that a copy of a circular is sent by post as soon as the weekly death returns come in to the head of the household in which the death has occurred and a visit is made during the week to ensure that the work has been carried out. This has been recently supplemented by a system of voluntary notification of all cases of phthisis removed to the workhouse, the house vacated by the patient being similarly purified. The recommendations of this circular are shortly as follows:—

1. Strip the wall paper off the wall. The paper should afterwards be burnt in the fireplace of the same room.

N.B.—The chief danger is from dust. Hence all articles should be thoroughly wetted before cleansing them. A supply of disinfectant for mixing with the water can be obtained free of cost at the office at the town hall, *but a disinfectant is not essential if everything is thoroughly wetted.*

2. Thoroughly wash the ceilings and floors and walls of the room.

3. Wash all bed-linen and other articles in the room and expose all bedding, pillows, &c., out of doors for several hours in bright sunshine.

For the last five years every death from any form of tuberculous disease has been made the subject of an inquiry under the following heads:—

Deaths from tubercular diseases.—Sex, age, disease, address, name of doctor, date of death, duration of illness, source of milk supply, places of residence during illness, nature of occupation during the last ten years, other cases of allied disease in the family, previous history of the house.

Condition of the house as regards (1) overcrowding, number of occupants (over 10, under 10), number of living rooms and bedrooms; (2) whether animals kept; (3) condition as to dampness, condition as to cleanliness; (4) ventilation; (5) lighting; (6) drainage arrangements; (7) dustbin; (8) size of yard, condition of paving.

I have omitted from my purview tuberculosis derived from the ingesta. The growth of public opinion as to the tuberculin test for cows and as to the provision of public abattoirs is so satisfactory that there is little doubt that valid progress will be made in these respects. I am anxious to confine our attention to the one question of notification of phthisis. I trust that we shall not allow small difficulties of detail to embarrass us. (The question of multiple notifications, for instance, is a very minor matter which can be safeguarded if necessary. Dr. Niven has shown, however, that there is practically no need for this.) If notification is desirable in the interests of the public health it should be adopted and a desirable principle is never impracticable. If limits of official action after notification are desirable there will be no difficulty in devising the scope of these limitations. We have heard so much about the reduction in the mortality from phthisis that the unthinking may lose sight of the enormous mortality still caused by it. Had time permitted I should like to have drawn attention to the erroneous inferences which have been drawn or suggested as arising out of the reduction of tuberculous diseases in adults along with the increased consumption of meat and the stationary mortality from tabes mesenterica along with the infantile use of cow's milk as food, but that must be reserved for another opportunity. I beg finally to recommend to your consideration the desirability of making representations to the Local Government Board urging upon the Board the importance of: 1. Allowing the same local option in respect of the notification of phthisis as of diseases which they at present allow to be added to the schedule of notifiable diseases. 2. Giving powers to local authorities to pay fees for voluntary notification of cases of phthisis. 3. Bringing up to date and codifying other sanitary legislation which has an important bearing on the prevention of phthisis—e.g., further precautions against encroachment on open spaces at the rear of dwellings,[1] enactments compelling local authorities to adopt proper by-laws for the erection of new buildings, improvements of the Housing of the Working Classes Act, &c.

[1] Among the most serious defects of the present law are the following: (*a*) In accordance with the model building by-laws a certain amount of free air space must be allowed at the rear of every dwelling-house. If, however, a person erects a building in his back yard encroaching on this air space and the encroachment is not discovered within six (or under certain possible but exceptional conditions twelve) months from the time of its erection the encroaching building cannot be compelled to be removed. (*b*) In the case of dwellings erected prior to the adoption of any building by-laws it is no offence to erect other buildings upon the open space attached to the old buildings, subject to the new buildings themselves fulfilling the requirements of the by-laws as to open space. The result of the defects of the law in the above respects is that insanitary areas, the fit breeding place for phthisis, are being produced in nearly every town, particularly in their more central parts.

A Clinical Lecture
AND DEMONSTRATION ON
LOCAL INFILTRATION ANALGESIA.

Delivered at University College Hospital on Jan. 19th, 1899.

BY ARTHUR E. BARKER, F.R.C.S. ENG.,

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GENTLEMEN,—For the last eight or nine months I have occasionally been operating on patients for various surgical conditions without using either chloroform or ether, trusting rather to one or other form of "local infiltration analgesia." Several of these cases have, as some of you have seen quite lately, shown such remarkable results as to afford much food for reflection. During all this period I have been endeavouring to make myself familiar with the whole subject of infiltration analgesia by every means in my power. Having seen the method employed abroad where it is largely used and having been much impressed by it it was only rational to get hold of the best and most recent of the now very numerous monographs on the subject and to study them carefully both as regards the physiological and physical theories advanced and the details of the practical application of the latter advocated in them. I confess for myself that I have only recently felt the full importance of the whole subject, though the study of it has been long. This is probably due to the fact that the mere manipulative details of the procedure, without the proper accomplishment of which analgesia is not produced, require considerable practice for their mastery and that at the outset one naturally only employs a new method in carefully selected cases. But of late these have increased in number and I can now claim to have familiarised myself with the procedure sufficiently to have approached the results in even long and serious operations which have already been achieved on a larger scale abroad, and the results I propose now to put before you. If you are at all like myself you will feel for a time a certain amount of distrust of the method and incredulity as to the results claimed for it here and there, but equally if you study the matter fairly you will be forced in the end to the conclusion, as I myself have been, that there is a great deal in "local infiltration analgesia" when properly carried out and that the results claimed for it by those who have employed it in hundreds of cases have not been exaggerated. But that to utilise it safely and extensively demands close study of the procedure on the widest basis is every day more and more clear to me and I hope will become so to you if you listen to my remarks and watch the operations to follow in which I hope to demonstrate the method in question.

To anyone who gives close attention to the practical details of local analgesia induced by the endermic injection of cocaine or eucaine β it must soon become abundantly evident that the procedure does not consist in the mere injection of a certain amount of one or other drug, so to speak, at haphazard into the field of operation. Many factors require to be taken into very careful consideration if we are to approach at all near to the end which we have in view—namely, the safe abolition of pain without the use of general anæsthetics such as chloroform, ether, &c.

When cocaine was first brought to the notice of surgeons many years ago great expectations were entertained as to its application to minor surgery. But experience with the stronger solutions of the drug (which were then considered necessary) soon proved, first, that it was dangerous and, next, that its action as then used in strong solutions was too local for anything but the most limited employment. It was therefore reserved for superficial parts, such as the eye, the mouth, and the anus almost exclusively. And I can well remember how disappointed I was myself in using it 12 or 15 years ago in cases of piles and on the gums and nose. Since then, however, important modifications have been made in the manner of employing these drugs which have led to their widespread use even for some of the greatest operations in surgery.

The primal fact which we have to keep in mind is that cocaine and its salts applied to the trunk of a sensory nerve

suspend the functions of the latter and abolish the sense of pain in all parts supplied by its terminal ramifications.

The first who appears to have made practical use of this fact (which had been published in 1885 in America by Corning and in the same year in Russia by Feinberg, independently of one another) was the French surgeon Reclus, whose method of producing analgesia by the injection of 1 per cent. cocaine solutions into the soft parts layer by layer does not differ in principle from the methods since developed and may be taken as the beginning of what is now known as "local infiltration analgesia." But it was found that even with such a dilute solution as that used by Reclus (= 1 per cent.) toxic effects followed in a few cases and that the application of his method had consequently to be limited to very small operations—that is, to operations confined to a small area. But in carrying out the principles underlying Reclus's method Schleich was able by further reducing the concentration of the cocaine solution and by using much greater quantities to extend the method to very much more wide-reaching operations, until now among adult patients it is employed very largely. It appears to me therefore proper that due credit should be given to Schleich for having, as it were, popularised this proceeding by reducing its risks and extending its use, although many of his data and theoretical conclusions were apparently erroneous.

But numerous modifications of Schleich's method also have been made since then in many directions and it has been simplified and improved. One of these improvements introduced by Oberst but foreshadowed by Corning is only applicable so far to the fingers and toes and perhaps to the whole hand and foot. It consists in arresting the return of blood from a member by applying an elastic ligature round its root and then injecting a very moderate amount of the cocaine solution over each of the several nerves of the part.

FIG. 1.

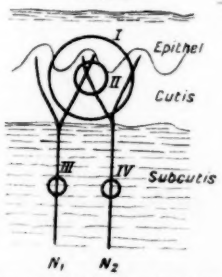

Diagram illustrating field of action of an injection according to the site selected.

This arrest of the circulation in a finger or toe appears to intensify the action of the drug enormously, as shown first by Corning, so that incisions may be made and even the bone gouged out without the slightest pain to the patient, as I have demonstrated within the last few days.

Finally, a modification of Reclus's method which consists in employing a drug of equal analgesic power with cocaine but of far less toxic energy and of bringing up the specific gravity of the solution to about that of the blood by the addition of chloride of sodium has come into use which bids fair to yield the most important results. The *rationale* of this modification I should like now to place before you. It is described in a very able paper by Dr. Braun of Leipsic, read before the Congress of German Surgeons last Easter at which I was present. It is also dealt with in another paper by his assistant, Dr. Heintze, since published.

In the first place, it is based upon the observation that in eucaine β (Benzoyl-trans-vinyl-di-aceton-alk-amin) we have a drug which is equal to cocaine in analgesic properties while it is far less poisonous, standing in the last respect to cocaine as one to four or five. In the next place, it is found that it can be used in extreme dilution, even up to one to 1000 or less, without forfeiting its analgesic effects. Thirdly, it has been proved that the addition of eight per 1000 of chloride of sodium to the solution improves its analgesic properties largely and has other desirable effects besides. Such a solution, consisting of eucaine one part, chloride of sodium eight parts, and water 1000 parts by weight, is the one which I am employing before you to-day. It can be used practically in any amount without danger of poisonous effects, seeing that at least 10 oz. would have to be injected before the supposed maximum dose of eucaine β had been reached. As a matter of fact, 300 c.c., or 10½ oz., have been injected in at least one operation without any ill-effects. But this will rarely be necessary.[1]

In considering the action of this fluid please keep prominently before you the fact established by Corning in America and Feinberg in Russia that cocaine applied closely to a sensory nerve-trunk produces analgesia over its whole distribution. Let me reproduce Dr. Braun's diagram to illustrate this (Fig. 1). It is quite plain that a proper fluid injected at a point where two sensory nerve filaments cross (II) may produce analgesia in both, and that if the injected fluid become diffused over a larger area (I) it may ultimately reach neighbouring filaments belonging to other nerves in one or other direction. As seen in the diagram it might meet with a nerve on the right (N 2) and affect it while missing that on the left (N 1). The same amount of fluid, however, as that employed in puncture II if injected near the trunk of the nerve at IV would produce nearly the same effect as that due to the diffusion marked by I, missing only the twig of N 1 which does not cross with the other of N 2. But if the same small quantity were injected into both the nerve trunks at III and IV the maximum of analgesia area would be reached without much diffusion of the fluid. It is this latter effect which is aimed at in the infiltration process, where by many injections of a very dilute solution over the course of sentient nerves it is hoped that the area of influence of each will overlap and so that no escape of any nerve twig shall be possible.

But of course the analgesia so produced might possibly result from various factors in the injection. It might be due (1) to the temperature of the injected fluid, (2) to the mechanical pressure exerted by the injected fluid upon the terminal sensory filaments, or (3) by the anæmia similarly produced; it might be due (4) to destructive chemical action on the nerves and tissues, or (5) it might be, finally, a specific but non-destructive effect of an injected drug upon the nerve.

Now, Dr. Braun and Dr. Heintze set themselves to ascertain by experiment how far these various factors played a part in local infiltration analgesia. The observations were made upon their own arms in the morning hours. This latter point was important because it was found that later in the day the sensibility of the skin is reduced, probably as the effect of taking food. It was also noticed that after alcoholic drinks it was easier to produce analgesia. Both of these points we must carefully bear in mind when employing this method.

The most important property of watery solutions in relation to the questions involved was their osmotic powers. They either gave or took water from the tissues or, at a certain concentration, they were indifferent solutions to which the tissues did not react at all. It is now known that all watery solutions *which have the same freezing-point* are isosmotic—i.e., they either equally give or take water from the tissues or are indifferent in this respect to the latter. It has also been observed that plain distilled water injected into the skin rapidly produces two effects. In the first place, there is pain more or less severe for the moment and then transient anæsthesia. The first of these appears to be due to osmotic tension and the second likewise. These effects of osmotic tension on the sensory nerves which may be called simply injection irritation and initial paralysis are easily observed by injecting pure water at first into the skin and then water with graduated amounts of a chemically indifferent salt such as chloride of sodium. It was found that all such solutions which have nearly *the same freezing-point* as the normal fluids of the body are indifferent to the tissues—that is, they produce no osmotic changes.

Other observers have placed the freezing-point of blood, lymph, and exudation at − 0·55° C. as nearly as possible. A watery solution of chloride of sodium of 0·9 per cent. has the same freezing point and is consequently osmotically indifferent to the tissues. All stronger concentrations withdraw water from these and cause pain; all weaker solutions cause the tissues to swell, also causing pain, and all the more the nearer they approach to pure water. It is unnecessary to go into this at any great length, but you will better understand the bearing of the whole question upon the

[1] The same amount has been injected into a rabbit without any evil consequences.

effects of injection upon sensory nerves if you look at this diagram (Fig. 2) from Dr. Braun to illustrate the osmotic effects upon the latter of watery solutions at various concentrations down to the freezing-point of blood and below it. Here we have on the horizontal line A B the stages of graduated concentration of a solution of common salt from 0 per cent., or pure water, to 10 per cent. The freezing-point below 0° C. of a part of these solutions is also given in the lowest lines of figures. The dark continuous curved line represents the sensory irritation indicated by pain which arises when the fluid is first introduced as pure water and then on the addition of increasing amounts of chloride of sodium. The broken line represents the transient sensory paralysis due to osmotic tension under similar conditions. The height of the curve corresponds, of course not mathematically but accurately enough, to the intensity of the irritation and the paralysis. In the middle stands the osmotically indifferent 0·9 per cent. solution of chloride of sodium. When *warm* it produces neither irritation nor paralysis of sensibility and is rapidly absorbed without leaving even a trace of change in the tissues. When injected into his own arm Dr. Braun found an apparently indifferent zone reaching from the 0·55 per cent. solution to about 2·0 per cent. in which neither injection-pain nor appreciable change of sensibility took place. But the same solution of 0·9 per cent. injected into inflamed tissues only gave a zone of insensibility in the immediate neighbourhood of the point of injection. You see also that starting backwards from a solution of 0·9 per cent. of common salt pain begins at about 0·5 per cent. and ascends until it reaches its maximum intensity with pure water, 0·0 per cent., while the immediate paralysing effect of osmotic swelling runs *nearly* parallel. An osmotic paralysis without irritation does not take place at all. Pure water besides produces in some cases distinct osmotic necrosis with exudations of inflammatory matter, and again even at the other end of concentration with 0·2 per cent. of salt this is seen. Stronger solutions than 0·9 per cent. show the effects of the removal of water from the tissues (B) up to 10·0 per cent. These consist also in irritation and sensory paralysis as seen in the right-hand curve.

The proof that the changes just described are due to osmotic processes lies in the fact that we may inject large quantities of 0·9 per cent. of chloride of sodium into the tissues until extensive mechanical œdema is produced without lowering the sensibility, provided the fluid is at the body temperature. Cooling of the same solution to 0·0° C. or lower produces very transient anæsthesia in addition to the irritation. Water, on the other hand, warmed to 50° or 55° C. leaves behind painful infiltrations without lowering the sensibility. The proof that the analgesia is not produced by pressure anæmia lies in the fact that an area may be distended to any amount with 0·9 per cent. of salt solution if it is kept at body temperature without disturbing the sensibility in the slightest degree. Also if a finger be tied with an elastic band and become engorged only paræsthesia results, not analgesia. A further proof that the effects described are due alone to osmotic changes is found in the fact that a number of other chemically indifferent substances produce the same effects if used in the same way. Dr. Braun gives a long list of these salts which I should like to show you did time permit, and finds that in the indifferent zone which these salts produce in certain watery concentrations their freezing-points are practically the same. Take, for instance, a solution of cane sugar. This at a concentration of from 5 to 8 per cent. has the same osmotic tension as 0·55 per cent. of chloride of sodium and injected into the skin produces like the latter no change of sensibility. But with a solution of only 3 per cent. sugar, which corresponds about to a 0·3 per cent. solution of common salt, a moderate injection pain and lowering of sensibility are produced. But the addition of 0·6 per cent. of salt to the sugar solution neutralises its osmotic effect again and the mixture produces neither pain nor anæsthesia. So much for the physical effects of salt and other solutions on the nerves and tissues, though I should like to touch upon other illustrations of the point from the paper quoted if I had more time.

Let us now consider the chemical action of solutions of various kinds on the sensory nerves. Of course we are concerned with those which are indifferent. There are many which are powerfully destructive and which cannot be injected even in great dilution. But of the indifferent it is shown that at the same concentration which yields a freezing-point the same as a 0·9 per cent. solution of common salt there is the same zone free of irritation and analgesia and no tissue change. I should like to give you the reasoning on this point in detail but it would carry us too far. It is well worked out by Dr. Braun in regard to many bodies. He also shows incidentally that even hydrochlorate of morphia exercises no *local* lasting analgesic effect except so far as it very slightly adds to the specific gravity of the water in which it is dissolved and that in plain watery solutions of from 4 per cent. to 1 per cent. it produces ever-increasing injection-pain and transient anæsthesia which are only diminished by the addition of 0·6 per cent. of chloride of sodium, so that its addition as in Schleich's solution is useless.

There remains now only the specific action of the analgesic solution to be considered. The effect of cocaine in this respect would be interesting to work out, but for the following reasons, as well as to save time I pass it by. We have, namely, in eucaine β a substance equal to it in analgesic properties and superior to it in possessing only a fourth or fifth of its toxic dangers. Cocaine besides is destroyed by boiling; eucaine β is not, and can therefore be sterilised. The freezing-point of its various solutions is almost identical with those of cocaine of the same strength. It keeps well and is cheap. For all these reasons it appears the best substance for our purpose, at all events for the present. But it is plain from what has gone before that in preparing any solution of eucaine β or cocaine we must employ warm osmotically and chemically indifferent fluid with a freezing-point of about − 0·55° C. as a medium so as to exclude all the physical effects of the injection *per se* and to leave the pure specific action of the paralysing drug to operate alone. With common salt solution in water of the strength of 0·8 per cent. and at the body temperature we have such a fluid equalling in its freezing-point that of the blood—namely, nearly − 0·55° C. To this we have only to add 0·1 per cent. of eucaine β and a fluid is furnished which meets our wants, its freezing-point being equal to nearly 0·9 per cent. of salt or − 0·55° C. We might make the eucaine β even weaker than this—1 in 1000—without forfeiting its specific action, but we should gain little by this and its action would be slower.

FIG. 2.

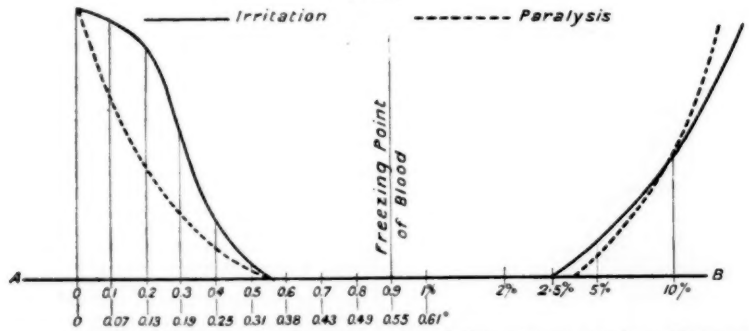

Diagram to illustrate the osmotic effects upon nerves of watery solutions of NaCl at various concentrations. The lower line of figures are − degrees C. The line marked 0 to 10% represents ascending concentrations of NaCl per cent.—e.g., 0·9% = 9 pro mille.

And now how do we make and use this fluid in practice? Perhaps the best course to pursue is to have powders made ready containing enough eucaine β and pure crystalline chloride of sodium for a couple of ordinary operations. I have had a number of such powders made up by our dispenser, Mr. Wilson, containing three grains of eucaine β and a certain quantity of chloride of sodium. One of these is boiled for a few minutes in seven ounces of distilled water and gives us a sterile solution of eucaine β one part, chloride of sodium eight parts, and water 1000 parts by weight. To use this it is well to have a special syringe such as this designed for the purpose (pattern shown). It holds 10 c.c. and has an asbestos piston in a glass cylinder which fits perfectly without any leakage. It can all be taken to pieces and boiled. It can be used, as you have just seen, either with a screw action on the piston-rod or by pull and push which is convenient for filling or emptying rapidly. To it are fitted with bayonet action either fine needles for the skin or coarser for the deeper parts. One of each is bent at an elbow for use in cavities. This syringe is filled with the above solution at a little above the body temperature and is armed with the finest needle. The latter is now thrust obliquely under the epidermis until its eye is buried. A few drops of the solution are then forced out by the screw when a white plaque is formed. Through this which is quite anæsthetic the needle is forced deeper in various directions while the fluid is pumped out, causing a thorough infiltration of the areolar tissues and if necessary of the muscles and periosteum all over the area to be operated on until an artificial mechanical œdema is produced and presumably all the nerves of the part are steeped in the fluid. The coarser needles are more suitable for the deeper structures. Finally, the smallest needle is thrust horizontally under the epidermis all along the course of the proposed incision (the screw being turned meanwhile) until a long plaque is produced of white colour and raised. In about five to 10 minutes the part will be in a state of analgesia. The operation will then be begun and if a deep one more fluid will be forced into the deeper tissues in its course.

And now as to the preparation of the patients. In the first place, they should *not* be operated on when fasting. All are agreed upon this point. They should have had a nutritious meal shortly before. This has its advantages and its drawbacks. It is beneficial to most patients to face a long operation such as an abdominal section or radical cure of hernia with a feeling of satisfied hunger and at their fullest strength. As vomiting is not to be anticipated there is no reason for not giving food. Moreover, the sensibility of the skin seems to be blunted after the use of alcohol, so that it is well to give an egg beaten up with five ounces of milk and one ounce of brandy half an hour before operation. Among the drawbacks to feeding before operation is the chance that it may be necessary to produce general anæsthesia before the operation is over for one reason or another, in which case food in the stomach is undesirable. Again, if there were stercoraceous vomiting in a hernia case or in one of internal obstruction food would be undesirable unless we had previously washed out the stomach which, by the way, should always be done in such cases. It is also a question whether we ought to allow food to pass through bowel which has been strangulated until after the lapse of a day or two. But we might give brandy in such a case without fear.

As to the drawbacks of local infiltration analgesia a good deal can be said. In the first place, the patient is conscious and this alone may prove a very great difficulty. It is probable therefore that for nervous people, and for children especially, the method will have but a very limited application among us here. Again, there is no motor paralysis and if in a deep dissection pain is felt the patient may move and embarrass the surgeon. But with experience in the use of the method we see but little of this and very large operations are done without trouble from this drawback. My list of operations performed under this form of analgesia during January includes—radical cures of hernia, three; abdominal section for acute general peritonitis, one; wiring patella, one; removing wire, one; osteotomy, one; varicocele, one; empyema, one; and ischio-rectal abscess, one. Another objection to infiltration is that it produces an extensive artificial œdema which masks anatomical details considerably. But a little experience gets over this, especially as after the incision the excess of fluid soon leaks away. Finally, the use of the drug during an operation may cause a little delay, but not much.

It remains to be seen whether the advantages of this local analgesia outweigh in the long run the drawbacks some of which I have alluded to in the case of large operations. For the smaller operations it certainly has a large field and in many of the larger procedures it has seemed to rival general anæsthesia with its well-known dangers. But whatever may be the ultimate verdict on this method—and I am not here as its advocate but rather to study its merits and demerits with you—it appears to be a procedure which deserves very careful attention, and it certainly is most astounding as well as intrinsically interesting to see an operation such as a radical cure of a large hernia done while the patient talks and (as you saw a few days ago) laughs as he enjoys a cup of tea while you are dividing or stitching up the abdominal walls and as he describes to you his sensations. For again remember, in conclusion, that the method does not produce total anæsthesia or motor paralysis but only analgesia.

I shall now operate on the patient for the radical cure of hernia on whom I have just demonstrated the infiltration method and on another for trouble in the knee and you will see for yourselves the result.

A CASE OF

BILATERAL PARALYSIS OF THE LARYNGEAL ABDUCTORS SUCCESSFULLY TREATED BY THE REMOVAL OF THE ISTHMUS OF A BRONCHOCELE.

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A SCHOOLBOY, aged 14 years, was brought to me by Dr. Bell Graham of Bradford on July 10th, 1897, complaining of difficulty in breathing. Hereditary tendencies and family health presented no features of importance. He had had good health previously. There was no history of injury, metallic poisoning, or residence in an endemically goitrous district. For the last seven years, after exertion, his breathing had been noisy when awake and especially so during sleep. These symptoms had gradually increased until now he was precluded from outdoor games of any kind with his schoolfellows and his loud breathing made visits to the seaside or country impracticable owing to the disturbance of the sleep of others in the same house. The boy's relatives only obtained sleep at home by insisting on his keeping very still all day, otherwise his breathing was heard all over the house. The patient was intelligent and well developed. Whilst sitting still his breathing was easily heard and obviously quickened. His voice was almost normal in sound but it was noticeable that talking any length of time increased his respiratory embarrassment. After having been made to run a short distance he became slightly cyanosed, his mouth was held open, his supraclavicular and epigastric regions together with the lower intercostal spaces were markedly indrawn and there was a very loud inspiratory and expiratory stridor. There were no signs of present or past disease of the chest. Laryngoscopically during quiet respiration the glottic chink was considerably narrower than normal. On forced inspiration the vocal cords were approximated. On phonation the vocal cords adducted perfectly, although the patient's voice sounded rather harshly as if voice-production were faulty. The larynx was otherwise normal. A diagnosis of abductor paralysis of the vocal cords was accordingly made. By a process of exclusion we concluded that the cause was in the neck. On examining the neck both lobes and the isthmus of the thyroid gland were enlarged. The lobes of the thyroid dipped slightly beneath the clavicles. The isthmus could be readily mapped out by the fingers and thumb as a broad thick strap across the trachea. On palpation the thyroid, although much firmer in consistence than the soft goitre of adolescents, lacked the stony hardness of malignancy. The goitre had never attracted much attention, but careful inquiry elicited the information that it had grown gradually, though slowly, during the last seven years. No protrusion of the eyeballs or other marked symptoms of exophthalmic goitre were present. Although the goitre had not been treated previously the patient had been carefully treated medically, surgically and expectantly, since the beginning of his

symptoms. We decided to relieve pressure on the recurrent laryngeal nerves by reducing the size of the goitre. The seductive portrait of the patient under the care of Mr. Pitts in Treves's "System of Surgery" was in my mind when I prescribed iodide of potassium for this purpose. This drug was exhibited cautiously but thoroughly for five or six weeks, beginning with five grains thrice daily and ending with 60 grains thrice daily. The iodism increased the respiratory difficulties very much. During this time we tried to increase the rate of progress by also prescribing thyroid extract. The favourable abstracts of reports of this method of treatment in the *Journal of Laryngology* for 1896 by Marie and other continental writers suggested this treatment. The patient was kept in bed, accurate observations were made regularly, but the typical toxic symptoms compelled us to stop the thyroid after we had given from 15 to 30 grains daily for three weeks. Neither remedy appeared to reduce the size of the goitre. By September, 1897, we had convinced ourselves that if any relief were to be obtained within a reasonable time it must be by surgical means.

On Sept. 5th, 1897, assisted by Dr. Bell Graham and Dr. J. Guy, I made a median incision over the centre of the easily-mapped-out thyroid isthmus about three inches in length. The isthmus was cautiously separated from the underlying structures and the attachments of the isthmus to the thyroid were transfixed by an aneurysm needle armed with a double ligature. The ligatures were tied and the isthmus was removed. The excised portion was about one inch in length vertically and wider than was anticipated owing to its having been compressed laterally when *in situ* by the lateral lobes. The trachea was not "scabbard like" and there was no immediate improvement in the breathing which at the time was very bad owing to the patient taking the anæsthetic badly. The progress of the case was uneventful. A month afterwards the boy expressed himself as feeling "a little easier" but exertion readily brought on stridor. On March 11th, 1898, the father reported that "they could not see any improvement." About the beginning of April his parents stated that "the boy was able to run as well as any other boys and that they were no longer disturbed in their sleep by his breathing." When the patient was shown to the Leeds and West Riding Medico-Chirurgical Society at the November meeting no abnormality of the larynx could be detected laryngoscopically. The goitre had disappeared and his neck measurement, which before the operation was 14 inches, was 13 inches, in spite of his being a year older and of his having grown considerably since the operation.

The only case recorded in British medical literature which I have been able to discover on almost all fours with this one is related shortly in the late Sir Morell Mackenzie's classical work.[1] The patient, "aged fifteen years—a tall lad—when perfectly quiet could breathe fairly well, but on the slightest exertion he experienced great dyspnœa and during sleep made a loud noise in his breathing. On examining the neck a moderate sized but very hard bilateral goitre was perceived and on using the laryngoscope the abductors of the vocal cords were found to be paralysed on both sides. The adductors did not seem to be at all affected and the voice was perfectly normal. By varied treatment extending over several months the bronchocele was cured and the action of the vocal cords became natural." In this case the isthmus of the thyroid does not appear to have been large. Sir Duncan Gibb was first led to suggest the feasibility of removal of the isthmus by observing "several cases of enlargement of the thyroid gland affecting one or both of the lateral lobes and implicating the isthmus."[2] In 1870 a post-mortem examination on a young man enabled him to prove that in some cases, "if not relieved by treatment the lateral lobes, which in their enlargement sometimes spring from the isthmus itself, may extend on either side of the trachea itself and completely encircle it. The consequence of this is that the tube is compressed laterally and its form becomes oval, with a very narrow passage to breathe through, which sooner or later ends fatally." In 1874 Mr. Holthouse operated on two females for Sir Duncan Gibb with the happiest results. In each case the trachea was greatly compressed and relief was speedily manifested. In 1883 Mr. Sydney Jones reported in THE LANCET a case of "enlargement of thyroid gland in a male producing pressure on the trachea and serious attacks of dyspnœa; removal of isthmus; atrophy of lateral lobes; cure."[3] In this case the patient was a labourer, aged 18 years. The duration of symptoms was for seven or eight years. The patient was quite well in less than two months. Mr. Sydney Jones's brilliant series of cases have shown us that in the words of Sir William Mac Cormac it is "a method of treatment which is comparatively simple, easy of execution, and promises excellent results in suitable cases"[4] and, further, that where the same symptoms are produced by an innocent enlargement of the thyroid without an hypertrophied isthmus removal of portions of the lateral lobes encroaching mesially on the trachea may be done quite as safely and with the same beneficial results as in those cases where the isthmus alone is excised.

In all the cases referred to I have been unable to find any reference to laryngoscopical examination. The pressure, judging from the speedily successful results, must have respected the recurrent laryngeals and the "scabbard-like" condition of the trachea readily accounted for the whole of the dyspnœa, whereas in this case six months had elapsed before the patient was obviously much better. Nor could we reasonably have expected more speedy results seeing that laryngoscopically the dyspnœa could be readily explained by pressure on the recurrent laryngeals producing the abductor palsy. Finally, I wish to express my indebtedness to Mr. Jacobson's "Operations of Surgery,"[5] not only for the valuable *résumé* which it contains of this operation but also for the ease with which I was thus enabled to look up the literature on the subject.

Bradford.

[1] Diseases of the Throat and Nose, vol. i., 1880, p. 444.
[2] THE LANCET, Jan. 23rd, 1875, p. 120.
[3] THE LANCET, Nov. 4th, 1883, p. 900.
[4] An address, Section of Surgery, British Medical Association, 1884, Brit. Med Jour., vol. ii., 1884, p. 232.
[5] The Operations of Surgery, 1889, pp. 436–438.

THE DISTRIBUTION AND ORIGIN OF TUBERCULOSIS IN CHILDREN:

AN ANALYSIS OF POST-MORTEM RECORDS IN 77 CASES WITH REMARKS THEREON.

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IN an interesting letter to THE LANCET of Dec. 17th, 1898, Dr. Walter Carr drew attention to the statement recently made by Sir Richard Thorne[1] that deaths from tabes mesenterica in children under one year and also tuberculous meningitis have decidedly increased during the years 1891–95. The increase in the number of deaths from these causes Sir Richard Thorne attributed to the reception of tuberculous infection into the alimentary tract. It has been shown by experiment that guinea-pigs when fed on tuberculous material soon develop tabes mesenterica; also that cows with tuberculous udders give tuberculous milk. The inference from these facts is that infants who are presumably fed chiefly on milk become tuberculous by drinking it. Dr. Carr from his records of post-mortem examinations at the Victoria Hospital for Children proves that tabes mesenterica is rare in children under two years of age, almost unknown in those under one year of age, and he invites expressions of opinion from other hospitals for children on this point. His own opinion is that the infection of tuberculosis in children is derived more frequently from the respiratory than from the alimentary tract, and that tuberculous meningitis is more often due to infective centres in the chest than in the abdomen. He regards the alleged increase of tuberculous meningitis as owing to increased correctness in diagnosis, whilst increasing incorrectness in diagnosis explains the alleged increase in tabes mesenterica amongst infants.

In order to arrive at conclusions on these points I have tabulated my own notes on 77 post-mortem examinations made on children dying from tuberculosis in the Children's Hospital, Paddington-green, during a period of eight years ending in December, 1898. The number of cases is small and does not convey any idea of the great mortality from tuberculosis amongst children treated at this institution. Parents in many cases have refused their consent to the holding of post-mortem examinations, and so have hindered

[1] Harben Lectures, November, 1898.

the accumulation of facts which might have aided in this inquiry. Many children have been discharged as incurable during these years and are known to have subsequently died from phthisis.

TABLE I.—*Showing the Number of Times in which Tuberculosis of Various Organs was found and its Degree in 77 Cases.*

THORACIC.

Pulmonary—			(*f*) Pericardial ...	Advanced and purulent ...	1
(*a*) Miliary, grey	Abundant	15			
	Sparse ...	4	(*g*) Pleuritic, miliary	Abundant	2
(*b*) ,, yellow	Abundant	4		Sparse ...	1
	Sparse ...	3	,, adhesive	Advanced	13
(*c*) Nodular	Abundant	21		Slight ...	12
	Sparse ...	7	,, purulent		4
(*d*) Cavitation, single	Advanced	5			
	Slight ...	2	Total		105
(*e*) ,, multiple	Advanced	6			
	Slight ...	5			

ABDOMINAL

Peritoneal—			Hepatic—		
(*a*) Miliary		29	Nodular	Advanced	2
(*b*) Adhesive and purulent ...		4		Slight ...	5
Intestinal—			Renal—		
(*a*) Nodular...		3	Nodular, slight...		4
(*b*) Ulcerative ...	Advanced	18	Tuberculous nephritis, advanced		3
	Slight ...	9			
Splenic—			Pancreatic, advanced		1
Nodular	Advanced	13			
	Slight ...	11	Total		102

CEREBRAL.

Meningitis—		With intra-cerebral nodules ...		4
,, miliary	9			
,, advanced	28	Total		41
Bones and joints	6			

GLANDULAR.

Thoracic glands—			Abdominal—		
(*a*) Hyperplasia		11	(*a*) Hyperplasia		11
(*b*) Caseation	Pronounced	35	(*b*) Caseation	Pronounced	20
	Slight	6		Slight	7
(*c*) Glandular abscesses ...		5	(*c*) Glandular abscesses ...		4
Total		57	Total		42

Both sets of glands were found caseous 15 times. In 3 cases neither set was implicated. In 12 cases the condition of the glands is not mentioned. More than one set of organs was sometimes found affected in the same patient.

Thus, tuberculosis of the various thoracic organs was found 105 times, of the various abdominal structures 102 times, of the brain and meninges 41 times, and of the bones and joints six times. Although the numbers of times that tuberculosis of the thoracic and abdominal organs was found are numerically almost equal in this series, the figures do not adequately represent the proportion of thoracic to abdominal phthisis, for the number of organs and structures in the abdomen is greater than in the thorax. In the thorax only three structures, lungs, pleura, and lymphatic glands, need be considered; the solitary case in which the heart and pericardium were affected may be set aside. In the abdomen the structures in which tuberculosis was found are seven—namely, peritoneum, intestines, lymphatic glands, liver, spleen, kidney, and pancreas. For purposes of comparison we may deduct from the abdominal cases those of splenic and hepatic tuberculosis, 31 in all, as being unimportant and also those of renal and pancreatic tuberculosis (eight cases), leaving only those in which the peritoneum, abdominal glands, and intestines were involved. We have then only to compare the frequency of pulmonary phthisis with that of tabes mesenterica and the figures appear as follows: thoracic tuberculosis was found 104 times and abdominal tuberculosis was found 63 times. Adding to these figures the number of times that the thoracic and abdominal glands were found to be caseous (thoracic 46 times and abdominal 31 times) we find the totals are: thoracic tuberculosis 150 times and abdominal tuberculosis 94 times. Numerically, therefore, thoracic tuberculous affections are in excess of abdominal to the extent of at least one-third.

The starting-points of tuberculosis in children.—The method of decision is difficult and perhaps not devoid of fallacy. One can only attempt to ascertain in which organ or organs the tuberculous process is most advanced and assume that these have been primarily affected. When many organs in different parts seem equally involved it is practically impossible to come to a conclusion. On the other hand, it may not follow of necessity that the structure found most affected was the first to suffer. Tuberculosis may be set up in one place but remain quiescent there, so far as its local manifestations are concerned, yet bacilli may be disseminated thence to other and distant parts and cause rapid and extensive destruction in them. Hence conclusions as to the primary seat of mischief based on the degree of local damage found may be erroneous. However, this is the principle upon which other investigations on the subject have been made and on the whole it has led to results similar to my own.

The figures in Table II. show that in 77 cases thoracic tuberculosis was most prominent and apparently primary in 42 (54·5 per cent.), and abdominal phthisis in 19 (24·6 per cent.). Of the remainder (16) the thoracic organs were as much affected as the abdominal in seven. In one either the bronchial glands or hip had been first involved. In one the origin was either in the kidneys or hip, in one it was articular, and in six it was unknown.

Glandular origin of tuberculosis.—The thoracic glands were found in a state of caseation 46 times and the abdominal glands 31 times. Both sets were caseous in

TABLE II.—*Showing the Probable Origin of Tuberculosis in 77 Cases with Ages of the Patients and the Cause of Death.*

Ages.	Thoracic.			Abdominal.			General.						Doubtful.		Articular.	Unknown.	Cause of Death.				Total number of cases in each period.
	Lungs and thoracic glands.	Lungs.	Thoracic glands.	Mesenteric glands.	Mesenteric glands and intestines.	Pancreas.	Lungs, bronchial and mesenteric glands.	Pericardium and mesenteric glands.	Lungs and mesenteric glands.	Lungs, bronchial and mesenteric glands, and intestines.	Bronchial and mesenteric glands and intestines.	Kidneys, lungs, mesenteric glands, and intestines.	Kidneys or hip.	Bronchial glands or hip.			Pulmonary or thoracic.	Meningitis.	Tabes mesenterica.	Diphtheria.	
Under 1 year	4	2	4	—	—	1	—	—	1	—	—	—	—	—	—	1	8	5	—	—	13
From 1 to 2 years ...	3	2	7	5	—	—	—	—	—	—	—	1	—	—	—	1	7	11	1	—	19
,, 2 ,, 3 ,, ...	2	4	1	1	1	—	1	—	1	—	—	—	—	—	—	1	6	5	—	1	12
,, 3 ,, 4 ,, ...	1	1	—	1	—	—	—	—	—	1	1	—	—	—	—	—	2	3	—	—	5
,, 4 ,, 6 ,, ...	2	1	3	1	1	—	—	—	—	—	—	—	—	1	1	1	3	8	—	—	11
6 years and upwards...	2	1	2	7	1	—	—	1	—	—	—	—	1	—	—	2	5	9	3	—	17
Totals	14	11	17=42	15	3	1=19	1	1	2	1	1	1=7	1	1=2	1	6	31	41	4	1	77

15 cases, which must therefore be deducted from the total, in three neither set was affected and in 12 their condition was not noted. Thus the glands were caseous in 62 cases (80·5 per cent.). But I have not regarded mere caseation as evidence of primary glandular infection and I can only trace the origin of tuberculosis with any degree of certainty to the glands in 32 cases. It was apparently in the thoracic glands in 17 cases and in the mesenteric glands in 15. This reduces the total percentage of primary glandular affection to 41·5 per cent. This percentage is considerably below that given by other observers. Thus Dr. Walter Carr[2] found a glandular origin in 72·5 per cent. of his cases; Dr. Sims Woodhead[3] traced the origin of tuberculosis to caseous bronchial glands in 75·6 per cent., to mesenteric glands in 73·7 per cent., and to mesenteric glands alone in 14 out of 127 cases. MM. Rilliet and Barthez[4] found the origin in caseous bronchial glands in 79 per cent. and in mesenteric glands in 46 per cent. of cases. Simmonds[5] discovered caseous bronchial and tracheal glands in 73 per cent. and caseous mesenteric glands in 46 per cent., whilst Dr. Walter Colman[6] attributed the origin to caseous thoracic glands in 79 per cent. and to mesenteric glands in 66 per cent. of his cases. The discrepancy between these statistics and my own may be due to the fact that I have discarded the glands as the primary source of infection unless they have been both obviously caseous, and also associated with miliary, or at all events comparatively recent, tuberculosis elsewhere. In my own cases of tuberculous meningitis to which I shall presently refer the percentage of primary glandular infection was probably 70·7 per cent., which more nearly approaches the results given by other observers. In cases of tuberculous meningitis it is usually easier to come to a decision as to the primary source than in cases of death from pulmonary or abdominal phthisis because meningitis soon kills, whereas pulmonary or abdominal phthisis must be far advanced before becoming fatal and in the latter cases it is very difficult to decide whether the glands, lungs, or intestines show the most advanced tuberculosis.

Comparative importance of pulmonary and abdominal phthisis in children.—We have seen that in 77 cases the proportions of thoracic to abdominal tuberculosis were as three is to two, also that thoracic tuberculosis was apparently primary in 54·5 per cent., whilst abdominal phthisis was apparently primary in 24·6 per cent. of cases. The difference is yet more striking when the causes of death are considered. Only four of the whole series actually died from tabes mesenterica. Three of these were over six years of age, one was aged between one and two years, but in this case fatal generalised peritonitis was caused by rupture of a mesenteric glandular abscess and there were no intestinal ulcers. The cause of death in 30 of the cases was pulmonary phthisis. 41 died from tuberculous meningitis, one from diphtheria, and one from purulent pericarditis:—

Table III. shows that tabes mesenterica is not directly fatal in young children. In the great majority of cases it only existed as part of generalised tuberculosis, giving rise to no characteristic symptoms, and it was unrecognised during life except when the mesenteric glands were sufficiently large to be palpable through the abdominal wall. Hence I share the doubts expressed by Dr. Walter Carr as to the truth of the statement recently made that there has been a large increase in the mortality from tabes mesenterica amongst children under one year of age during the years 1891-95. Such statements, when based on the Registrar-General's reports, unless supported by records of post-mortem examinations, are not reliable. The increase in the returns of death certificates under this heading is doubtless due, as Dr. Carr holds, to the prevalent superstition that every wasting infant who has also diarrhœa is suffering from "consumption of the bowels." Medical men are forced to aid and abet this superstition, for by fostering it they do not fall into discredit when their patients die, whilst if their patients recover the medical attendant's reputation becomes greatly enhanced. The table, however, shows that in children aged between one and two years tabes mesenterica was more frequent than at any other age. Yet six of the eight cases died from pulmonary phthisis and two from tuberculous meningitis. Tabes mesenterica may therefore be set up at a very early period of life (one of my cases was only three months old), although it is never the direct cause of death in infants.

[2] Transactions of the Medical Society of London, 1894, p. 298.
[3] Lectures on Tuberculosis, THE LANCET, July 14th and 21st, 1888.
[4] Maladies des Enfants, third edition, vol. iii., p. 846.
[5] Beitrag zur Statistik in Anatomischer Tuberculose im Kindesalter, Dissertation, Kiel, 1879.
[6] Brit. Med. Jour., vol. ii., 1893, p. 740.

TABLE III.—*Showing the incidence of intestinal ulceration, the ages at which it was found, and the cause of death in 27 cases.*

Ages.	Ulceration. Advanced.	Ulceration. Slight.	Mesenteric glands. Enlarged.	Mesenteric glands. Caseating.	Not mentioned.	Cause of death.	Total.
Under 1 year ...	—	3	—	2	1	Tuberculous meningitis ... ... 2; Pulmonary phthisis 1	3
From 1 to 2 years	5	3	1	7	—	Tuberculous meningitis ... ... 2; Pulmonary phthisis 6	8
,, 2 to 3 ,,	2	1	—	2	1	Tuberculous meningitis ... ... 1; Pulmonary phthisis 1; Diphtheria 1	3
,, 3 to 4 ,,	2	—	1	1	—	Tuberculous meningitis ... ... 1; Pulmonary phthisis 1	2
,, 5 to 6 ,,	1	2	1	1	1	Tuberculous meningitis ... ... 1; Pulmonary phthisis 2	
,, 6 to 7 ,,	2	—	—	2	—	Pulmonary phthisis 2	2
,, 7 to 8 ,,	1	—	—	1	—	Tuberculous meningitis ... ... 1; Pulmonary phthisis 1	1
,, 8 to 9 ,,	4	—	1	2	1	Tuberculous peritonitis 3	4
13 years	1	—	—	1	—	Tuberculous meningitis 1	1
Totals	18	9	4	19	4	—	27

The causes of death in these 27 cases were as follows: tuberculous meningitis, 9; pulmonary phthisis, 14; tuberculous peritonitis, 3; and diphtheria, 1.

TABLE IV.—*Showing the Probable Origin of Tuberculous Meningitis in 41 Cases.*

Thoracic	Lungs 5	Unknown	General miliary tuberculosis ... 1
	Lungs or mediastinal glands ... 5		No tubercle elsewhere 1
	Mediastinal glands 14		Head only examined 3
Abdominal	Ulceration 1	Doubtful	Thoracic or mesenteric glands ... 2
	Mesenteric glands or ulceration ... 2	Articular	Elbow or knee ... 1
	Mesenteric glands 6		

Of these 41 cases the origin was: thoracic in 24 cases (58·5 per cent.) abdominal in 9 cases (21·9 per cent.); and glandular either in abdomen or thorax (probably) in 29 cases (70·7 per cent).

The ages of the 41 patients in the above table were as follows:—

Under 1 year	5 cases.	From 5 to 6 years... ...	5 cases.
From 1 to 2 years ...	11 ,,	,, 6 to 7 ,, ...	1 ,,
,, 2 to 3 ,, ...	5 ,,	,, 7 to 8 ,, ...	3 ,,
,, 3 to 4 ,, ...	3 ,,	,, 8 to 9 ,, ...	4 ,,
,, 4 to 5 ,, ...	2 ,,	,, 9 to 14 ,, ...	2 ,,

In 24 cases, therefore, of 41 (58·5 per cent.) the origin of meningitis was in all probability thoracic. In nine only (21·9 per cent.) it seemed to have been abdominal. In two of the thoracic cases otitis media might have been the immediate cause of the meningitis. In one there was disease of the tarsus, but the affection of the lungs was also far advanced. In two there was strumous dactylitis, but in one of these the bronchial glands and in the other the bronchial and mesenteric glands were caseous. In one the hip-joint had been excised some months before death, but the wound had quite healed, whilst the bronchial glands were caseous.

One had had a tuberculous testis removed shortly before death, but the cause of the meningitis was probably a large mediastinal abscess. In one the origin was definitely articular (elbow and knee), no tuberculous foci being found elsewhere in the body. In the two doubtful cases the origin might have been either in the thoracic or the abdominal glands. Of the five cases of unknown origin, one had general miliary tuberculosis, in one no tubercle was found elsewhere in the body, but the internal ear does not seem to have been examined. In the remaining three only the head was examined. The table illustrates the well-known fact that tuberculous meningitis is almost invariably secondary to tuberculous affection elsewhere, also that its origin is far more commonly thoracic than abdominal, and, finally, that the commonest source of meningitis is from caseating glands, chiefly in the thorax.

Alleged increase in tuberculous meningitis.—It has been stated in the Harben Lectures for 1898 that deaths from tuberculous meningitis as well as from tabes mesenterica are increasing in frequency. So far as the year 1898 is concerned I believe that there has been an increase in the number of deaths from meningitis in children, but I have attributed the increase to the effects of the very severe epidemic of measles which swept the country in the autumn of 1897 and the first quarter of 1898. Pulmonary tuberculosis is a common sequela to the bronchial catarrh of measles, hence the increase in meningitis only means an increase in pulmonary phthisis in children. Yet it must be remembered that tuberculous meningitis, like tabes mesenterica, is often wrongly diagnosed. In a bygone age pneumonia was called "brain fever"; now, when a child has pneumonic delirium he is usually supposed by the public to be suffering from tuberculous meningitis.

Mode of entry and spread of tuberculosis in children.—The local inoculation of tubercle through the skin need not concern us here. We have only to consider the entry of tubercle bacilli by the respiratory and by the alimentary tracts. In the one case it is usually assumed that they are inhaled directly into the lungs, in the other that they are swallowed in food and so pass directly into the alimentary tract. The arguments in favour of the inhalation theory are—(1) that pulmonary tuberculosis is far more common in children than mesenteric and that the alleged increase in the death-rate from tabes mesenterica in infants under one year, has no foundation in fact; (2) that the proportion of caseating thoracic glands is much greater than that of caseating mesenteric glands and the degree of caseation in the former is usually more advanced than in the latter; and (3) that glands are usually affected directly through the structures with which they are associated. Hence the inferences drawn are that mesenteric tuberculosis is secondary in point of time, frequency, and importance to thoracic, and that tuberculosis in children is more frequently due to inhalation of bacilli into the lungs than to their introduction by means of food, especially milk, into the alimentary tract. This is, I believe, the gist of Dr. Carr's contention and Dr. W. Colman agrees, saying: "Without doubting the infection of milk in some cases I am led to attach more imp ortance to the condition of the thoracic lymphatic glands, as the process was more advanced in them as a rule than in the mesenteric glands and in several they were extremely caseous when the mesenteric glands showed little or no change."[7]

I do not think there can be any doubt that in children there is a great preponderance of thoracic over mesenteric tuberculosis and that deaths from tabes mesenterica in young children are practically unknown, yet these facts do not prove that infection is from direct inhalation of bacilli into the lungs, nor do they disprove that bacilli entered by the alimentary tract. On the other hand, the entry of bacilli into the alimentary tract does not prove that they have been introduced in milk or other food. They may have floated in air entering the mouth and have been subsequently swallowed in food or mucus. The great excess of infection of thoracic glands over that of mesenteric glands may be explained on other grounds than on the supposition that it is due solely to entry of bacilli through the lungs. It must be remembered that the thoracic glands are commanded on all sides, for the lymphatic streams all converge in the thorax. Dr. Sims Woodhead has demonstrated the course of tuberculosis through the pharyngeal and tonsillar structures, through the glands in the neck, then those in the thorax, and finally to the lung itself, in pigs. He has also traced tuberculosis from a caseous or old calcareous mesenteric gland through the chain of retro-peritoneal glands up through the diaphragm to the posterior mediastinal and bronchial glands and so on to the lung.[8] To these modes of access to the mediastinal and bronchial glands may be added those through the œsophageal lymphatic plexus. The œsophageal lymphatics join the posterior mediastinal glands and also, near the root of the lung, the pulmonary lymphatic vessels which pass through the bronchial glands and the tracheal and œsophageal glands before terminating in the thoracic ducts. The œsophagus has not, as far as I know, been considered in this relation. Yet although I have never found a tuberculous ulcer in the œsophagus of a child, the tube after death is usually in a most unclean condition, lined with slimy mucus and particles of food. It is not, therefore, improbable that bacilli accompanying mucus or food may be carried almost directly through the œsophageal lymphatics into the mediastinal and bronchial glands and so in time affect the lungs.

Infection of the lungs through the blood.—Although tubercle bacilli are rarely found in the blood there can be no doubt that they must often exist in it. We cannot explain the origin of tuberculous meningitis (in the absence of local tuberculosis such as middle-ear disease) except on the supposition that the bacilli are carried to the brain by the blood. A wandering leucocyte with bacilli in its maw, although endowed with powers of movement, can hardly make its way up the lymphatics against stream to the meninges. The lymphatics all eventually meet in the thoracic ducts, and their lymph passes almost directly to the lungs through the right heart. Hence if lymph picks up bacilli on its way through caseating abdominal and thoracic glands it must carry them into the pulmonary circulation. So the lungs are exposed to blood infection as well as to infection by direct inhalation of bacilli into the alveoli, whilst, as previously stated, the reason why the thoracic glands are more prone to tuberculous infection than the abdominal may be because they are the meeting place of so many lymphatic streams. On the other hand, the mesenteric glands can only be affected either directly from the intestines or by bacilli brought to them in the circulation.

Auto-infection.—It has been suggested, and Dr. Carr supports the view, that intestinal tuberculosis in young children may be due to deglutition of their own tuberculous sputa. It is true that young children do not expectorate. Yet as tubercle bacilli are not found in the sputa in cases of miliary tuberculosis one would expect secondary intestinal tuberculosis to be most marked in cases of advanced cavitation, when, presumably, the sputa swallowed must be swarming with bacilli. Yet I have not been able to satisfy myself that this is so. Indeed, whilst writing this paper I have made a post-mortem examination on a child, aged between six and seven years, who died with more extensive cavitation than I have ever seen in one so young. Both apices were converted into hollow shells. During the three months she was under observation I am certain that she never expectorated at all and therefore must have swallowed an enormous quantity of infective material. Nevertheless, there was not the slightest trace of intestinal ulceration and the mesenteric glands were perfectly normal. A few nodules in the spleen were the only signs of abdominal tuberculosis. The bronchial and posterior mediastinal glands were all enlarged and advanced in caseation. Such cases seem to show that it must be exceedingly difficult to produce intestinal tuberculosis by swallowing tuberculous matter.

To those engaged at children's hospitals who have for many years diligently propagated the doctrine that milk is the food for babes, the idea that they may have thereby aided in the propagation of tuberculosis is not a pleasant reflection. Yet by a saving grace we have been accustomed to order the milk to be boiled, or at least scalded, and this may perhaps allay our apprehensions. Moreover, we have seen countless LUMBERS of marasmic infants at once begin to thrive when fed on milk. These are the very children who are supposed to be afflicted with consumption of the bowels, whereas they have merely suffered from the results of improper feeding. It would be hard, indeed, to think that we have saved them from one fate only to condemn them to another.

The strongest argument, after all, against milk as an important producer of tuberculosis is that children of the class to which hospital patients belong seldom get milk fresh

[7] Brit. Med. Jour., vol. ii., 1893, p. 740.

[8] Channels of Infection in Tuberculosis, THE LANCET, Oct. 27th, 1894.

from the cow. They are fed almost invariably on condensed milk and on cheap patent foods. Whatever may be said against these articles of diet they cannot be blamed for being tainted with bacilli—at all events, at the time they leave the manufacturers. Yet the number of deaths from tuberculosis among such children far exceeds that of deaths from other diseases. My experience among children of richer classes is limited, but leads me to believe that fresh cow's milk is rarely given to them. If they get milk at all it has been boiled until its chief virtues have left it together with any bacilli which it may have contained. It soon then disagrees and the infant is made to go through a course of proprietary foods which render it rickety and often scorbutic and in one way only lessen its chance of acquiring tuberculosis. The public are peculiarly tenacious of a particular fact once grasped and are apt to generalise too widely from it. The fact that some milk is tuberculous means to them that all milk is tuberculous, and the practitioner who ventures to prescribe it is regarded as an ignoramus or even worse.

It would be futile to deny that a certain amount of danger and a considerable amount of difficulty attends the use of cow's milk as a diet for children. Still it will always remain the best of infant's foods. The public must be warned against regarding the aims and object of our sanitary authorities as a mere crusade against cows. Purify our dairies as we may, we shall still have bacilli amongst us. It is by making clean our habitations that we shall most effectually drive bacilli from our midst; and this is the ambition of the Association for the Prevention of Tuberculosis. The purification of our milk-supply is but a small part of its duties, and one might as well hope to eliminate tuberculosis by shutting up the monkey-house and aviaries at the Zoological Gardens as by banishing bacilli from our dairies alone.

Synopsis.—1. Thoracic tuberculosis in children is more common than abdominal in the proportion of three to two. 2. Tabes mesenterica as a cause of death in young children is practically unknown. 3. The preponderance of thoracic over abdominal tuberculosis is not necessarily and solely due to the direct entry of bacilli into the air passages. In addition to this mode of infection the lungs may be affected: (*a*) by bacilli entering the thoracic glands through the lymphatics of the pharynx, tonsils, and œsophagus above, and through the lymphatics of the intestines and the abdominal glands below; and (*b*) by the entry of bacilli through the thoracic ducts into the pulmonary circulation *viâ* the right heart. 4. Primary infection through the alimentary tract does not prove that food has been the sole source of evil. Therefore tuberculosis in children is not likely to be materially checked by purification of milk-supply alone. 5. The alleged increase of tuberculous meningitis of late years is probably due to pulmonary tuberculosis set up by severe epidemics of measles.

Upper Berkeley-street, W.

A WOMAN DISEMBOWELLED BY A COW RECOVERY.

BY THOMAS BELL, M.R.C.S. ENG., L.R.C.P. LOND.

ABOUT 7.30 A.M. on July 5th, 1898, a message arrived requesting my attendance at a village two miles away upon a woman who had just been tossed by a cow. No particulars of the injury could be obtained. Dr. A. W. Cook Young, my assistant, who attended as soon as possible, on seeing the greater part of the bowels external to a wound in the abdominal wall, decided not to attempt the reduction alone; he gave a subcutaneous injection of a quarter of a grain of morphia, applied flannels wrung out of hot water to the bowels, and returned for me. Having prepared everything which might be required I arrived at the house about 10 A.M.

The patient was a married woman, aged 42 years, and was the mother of 12 children. It appeared that she was crossing the cow-yard to feed some poultry when a cow tossed her into the air and she alighted on the left side of the head and left shoulder. On reaching the ground she managed to struggle to her feet and walked about 30 yards into the house where she at once fell on the floor. On examination I found a transverse wound six inches in length, the centre about the middle line, about one-third of the distance below the umbilicus towards the pubes. Some 18 inches of the transverse colon and the whole of the mesenteric portion of the jejunum and ileum were protruding through the wound—about 20 feet of the small bowels. I at once carefully washed the left side of the abdomen and wound with a one in 20 solution of carbolic acid and the bowels with a one in 40 solution and at the same time examined them for any injury and laid them on the left side of the abdomen. The left hand was partly introduced into the wound. The reduction was begun with the lower ileum, passing it through a small opening between the thumb and index finger downwards and at first towards the cæcum, afterwards directly downwards, the whole ileum and jejunum being replaced; the transverse colon and greater omentum were returned last to the abdomen. 12 chrome catgut sutures saturated in a one in 40 solution of carbolic acid were introduced deeply but not touching the peritoneum. On first seeing the patient I doubted whether she would survive the reduction, the shock having been so severe, but fortunately no hæmorrhage or injury to the bowel had occurred and when the reduction was complete and the wound had been sewn up she expressed herself as feeling better "now her bowels were in their places again." From the time of the goring to the end of the reduction was about four hours. The wound was dressed with a one in 80 solution of carbolic acid and covered with antiseptic gauze and a towel was fastened over all. The temperature was 97·6° F. and the pulse was 120. She was ordered a milk and beef-tea diet and was given quarter-grain doses of morphia and ammonia. About 5 P.M. she was sick and as there was a complete absence of pain the morphia was discontinued, it being considered the cause of the sickness, and hydrocyanic acid, ammonia, and tincture of hyoscyamus were given.

The following brief notes tell the after-history of the case. On July 6th the patient was very comfortable. She was not in pain and there was no tenderness on pressure about the abdomen. The temperature was 98·7° and the pulse was 120. On the 7th there was no pain and she felt better, taking milk and beef-tea freely. The temperature was 99·7° and the pulse was 100. On the 8th she was sick at 2 A.M. without apparent cause. There was no pain. The temperature was 99·5° and the pulse was 94. On the 9th the wound was dressed. Union by first intention had taken place through the whole length of the wound which looked very healthy. There was no pain. The temperature was 98·4° and the pulse was 92. On the 10th and 11th the wound was dressed. On the 10th the temperature and pulse were 98·5° and 92 respectively and on the 11th 99·2° and 94 respectively. The bowels had not been moved since the injury though small doses of sulphate of magnesium and tincture of nux vomica had been given. A solution of cascara was now added. On the 12th the bowels acted three times freely. Seven sutures were removed. The temperature was 98·7° and the pulse was 94. On the 13th the temperature was 98·6° and the pulse was 94. The remaining sutures were removed. The wound was healed and quite firm. The patient was still on milk and beef-tea diet and taking quinine, cascara, and a solution of iron. On the 15th solid food was allowed for the first time. The temperature was 98° and the pulse was 90. The only further trouble with the case was caused by the inaction of the bowels, this causing a rise of temperature on the 21st to 100 4°. An enema and stronger aperients producing free action of the bowels brought it down, as on the 23rd it was only 99° and then went down below normal, and the bowels also acted daily. On the 29th the patient was allowed to sit up for a few hours. On August 10th she was up all day, moving about and doing light work.

Remarks.—This case is very satisfactory for antiseptic treatment, as every aseptic condition was absent in the house and in the patient's surroundings, and the dwelling about the last house one would have chosen to treat such a case in. The husband's position put a trained nurse out of reach and the nursing was done by neighbours coming in and doing what was required, I giving strict orders that under no circumstances were they to attempt to look at or interfere with the dressings and the wound. When seen on Jan. 14th, 1899, the patient said that she should not know that she had been injured and was working as usual.

Uppingham

TWO CASES OF INTUSSUSCEPTION IN INFANTS TREATED BY ABDOMINAL SECTION AND REDUCTION; RECOVERY.

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SURGEON TO, AND LECTURER ON CLINICAL SURGERY AT, GLASGOW ROYAL INFIRMARY.

THE history of the cases of intussusception narrated by Dr. David B. Lees and Mr. A. Quarry Silcock at the meeting of the Clinical Society of London on May 13th, 1898, the report of which and the subsequent discussion on this subject are contained in THE LANCET of May 21st, 1898, inclines me to believe that short reports of two cases of intussusception in young children in which I performed abdominal section with success may be of interest.

CASE 1.—A female infant, aged five months, was admitted into the Glasgow Royal Infirmary on Sept. 13th, 1896, at 3.30 A.M., suffering from abdominal pain and from sickness. The mother supplied the following history. The child had always been very healthy and plump. Her bowels had been moved on the day before admission; 18 hours before admission she began to cry and to draw up her legs and strain, but nothing came away from the rectum; eight hours before admission she vomited frequently, when the mother went to a chemist who gave a "powder" to relieve the vomiting; this, however, gave no relief. Two hours later a little slime and blood were passed by the bowel and on this being repeated the mother consulted Dr. Patrick, jun., of Bridgeton, who recognised the condition and ordered removal to the Glasgow Royal Infirmary. When I saw the child the pupils were slightly contracted, which was possibly the effect of the "powder," and there were abdominal uneasiness and blood around the anus. On palpating the abdomen there was no tension of the abdominal wall and a sausage-like tumour was easily made out on the right of, and slightly above, the level of the umbilicus. The mass was slightly moveable in all directions and pain was produced by compression. Under deep anæsthesia the mass was again examined and I attempted to reduce the intussusception by inflating the large intestine with hydrogen gas. As the gas was introduced the mass moved downwards and to the right and by manipulation I was conscious of its becoming smaller; it apparently diminished to one half of its original size. The inflation combined with manipulation was continued for a few minutes but the tumour remained. The abdomen was then opened in the middle line and the affected area of bowel was easily found and brought near to the abdominal wound. The intussusception was of the ileo-colic variety. Reduction was effected by gentle traction on the ileum combined with compression of the mass within the colon towards the ileum, but the serous portion of the invaginated bowel was red and rough for a distance of two inches and here adhesions were gently broken down. The wall of the invaginated portion was thickened. The margins of the abdominal wound were brought together by a row of sutures of catgut through the peritoneum, a second row through the aponeuroses, and a third row through the skin. The usual dressings were applied. There were two points to be noted during the operation: (1) the small space available between the umbilicus and pubes in a fat child aged five months; and (2) that while there was distension of the small intestine generally the portion of the ileum adjoining the intussusception for a distance of a foot was empty, ribbon-like in form, and with its muscular coat in a condition of contraction. It seemed to me that the active peristalsis, however induced, may have been the cause of the disease. I afterwards learned that the mother who suckled the child had been eating quantities of fruit on Sept. 12th and this may have been the intestinal irritant in the case of the child.

There is not much to add about the history of the case after operation. One minim of tincture of opium was given when the anæsthesia passed off and a teaspoonful of milk was administered every hour. This amount of milk did not satisfy the child, and on the day following the operation and just before the time of my visit the catgut stitches gave way during a spell of crying and struggling, and when I saw the child many coils of small intestine were outside the abdominal wound and through the promptitude of the nurse covered with a sponge wrung out of hot solution of carbolic acid. Chloroform was given and the intestine was returned, and this time eight silkworm gut sutures were passed through all the layers of the abdominal wall and the edges of the wound were approximated. The mother was allowed to suckle the child and she appeared comfortable. Two days later I gave the mother castor oil and within 24 hours there were several evacuations from the bowels of the child. The sutures were removed on the tenth day, and the child left the hospital quite well two days later, or 12 days after the operation.

CASE 2.—A male infant, aged seven months, was admitted under my care into the Glasgow Royal Infirmary at 11 P.M. on April 28th, 1898, the boy having been seen during the afternoon by Dr. Robert Grieve of Glasgow. The mother stated that she noticed something to be wrong with the child about 2 P.M. The child who was usually contented and happy suddenly screamed out and the screams were repeated at short intervals of time. Vomiting occurred within an hour and subsequently there were diarrhœa and the passage of blood and slime by the bowel. The child was suckled by the mother and had nothing except the mother's milk and the mother had not, so far as could be ascertained, taken any unusual article of food. On admission the child was evidently suffering from abdominal pain coming on at intervals of a minute, but there was no collapse. Palpation of the abdomen detected a sausage-shaped tumour slightly above the level of the umbilicus and extending to the left of the middle line. During the examination and in one of the paroxysms of pain a mixture of blood and slime passed through the anus. Chloroform was given and a further examination was made. An attempt at reduction by manipulation was unsuccessful and the abdomen was therefore opened in the middle line, when a brownish-coloured mass of large intestine presented. The swelling was about eight inches in length, extending from two inches to the left of the umbilicus and curving downwards and to the right into the right iliac fossa. In order to effect reduction by a combination of traction on the ileum with compression of the colon beginning below the intussusception and extending toward the ileum it was necessary to enlarge the wound in the abdominal wall to a point an inch above the umbilicus and with this increased space for manipulation reduction was effected. The cæcum and vermiform appendix were found reddened and the walls thickened and roughened, and upon their reduction some flaky lymph was seen. The small intestine was distended up to a point about a foot distant from the intussusceptum, but below this the gut was ribbon-like in form and the muscular coat was in a state of contraction. Silkworm gut sutures were employed, being passed through all the layers of the abdominal walls. When I saw the child next day fæces mixed with a little blood had been passed. The child had been sleeping and there was no pain or sickness. On May 1st the site of the wound was examined owing to a slight fouling of the dressing with urine, but union had occurred. The sutures were removed a week later and the child left the infirmary well 19 days after operation. He had been restless for three days owing to the eruption of the incisor teeth.

It will be noted that in Case 1 when the child was under the full influence of the anæsthetic I employed inflation with hydrogen gas without success. I believe, however, that had the abdominal wall not been completely relaxed I might have regarded the reduction as complete. The examination of the cæcum, which formed part of the intussusceptum, inclines me to believe that to have produced sufficient pressure within the colon to have broken down the adhesions would have been attended with risk of perforation near the cæcum or elsewhere. In the second case I did not attempt inflation as the amount of bowel invaginated was obviously extensive and the results of inflation are necessarily uncertain in such cases and the process is not unattended with danger. By performing abdominal section it is not difficult to determine whether reduction can take place by combining gentle traction on the ileum with compression of the intussusceptum—a combination not attainable by the use of inflation or of enemata—and the operator may, if necessary, repair perforations or perform resection.

Glasgow.

A NEW METHOD OF TREATMENT FOR PROLAPSE OF THE UTERUS WITH NOTES OF 10 CASES OF PROCIDENTIA.

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PROLAPSUS UTERI is one of the reproaches of gynæcology. It is very common among poor working women, a class who can least afford to be incapacitated when many mouths are probably dependent upon their efforts. No further excuse than this is needed for investigation into this subject. In my preliminary notice[1] I described the relation which evolution appeared to bear as a factor in the causation of this complaint. We have only to consider the mechanical disadvantage at which the ligaments of the uterus are placed in the erect position and the excellent support which they afford in the quadrupedal position to at once understand that woman lost almost as much as man gained by the change from the latter to the former. In the erect position the heavy end of the uterus is raised up instead of hanging down and directly it passes the perpendicular gravity helps to retrovert it. In the quadrupedal position, the vagina becomes a strong suspensory ligament, instead of a weak supporting column, while the abdominal wall bears its proper share in supporting the contents of the abdomen and prevents undue straining of the pelvic floor.

The disadvantages of the erect position are partly counterbalanced by the curve between the brim and the outlet of the human pelvis as compared with the almost straight line found in the quadrupeds. Natural selection during many thousands of years has achieved a great deal and produced in single women a type which in the majority is able to undergo even severe muscular exertion during the prime of life without prolapse occurring. But the margin of security in many cases is small. Any great strain or relaxation of the pelvic structures from ill-health or advancing age, even in single women, is liable to be followed by prolapse and even procidentia in some cases. As soon as pregnancy has occurred the liability is greatly increased owing to the probability of a disturbance in the equilibrium of the forces within the pelvis. There appear to be three main causes of prolapse: (1) failure of the uterine ligaments; (2) laceration, weakness, and relaxation of the pelvic floor; and (3) increase in weight of the uterus. The part played by each of these causes varies very much in different individuals.

The uterine ligaments may give way without any relaxation of the pelvic floor, or increase in size of the uterus. I described a case of this kind occurring in a single woman, aged 35 years, where procidentia occurred and ruptured an intact hymen, although the uterus was normal in size and the pelvic floor was perfect. In contrast to this I have recently operated on a patient, aged 43 years, with complete rupture of the perineum extending through the sphincter ani which occurred 10 years ago. During all that time no descent of the uterus followed in spite of the great imperfection in the pelvic floor, showing that the ligaments alone are capable of sustaining the uterus in some cases, but if they are defective even a good pelvic floor with an intact hymen will not prevent procidentia. In other cases the ligaments may be just strong enough to keep up the uterus, provided that they are assisted by a normal pelvic floor. Under these conditions if rupture of the perineum occurs and is left unrepaired prolapse will soon begin. Or the fault will be found in the increased weight of the uterus from sub-involution or other cause. Here again the ligaments may be just strong enough to sustain the normal uterine weight, but as soon as it is increased they commence to stretch. When the uterus has been reduced to its proper size by appropriate treatment the patient recovers and can do without a pessary. But very large numbers of cases occur where treatment is not so simple. In the same patient all these causes may be at work. Combined with an enlarged uterus we often find in procidentia a weak and imperfect pelvic floor with incapable stretched ligaments. The uterus cannot always be reduced to its normal weight. When the general health is deteriorated the perineum stretches again after repair and the whole pelvic floor loses tone and partly gives way. While in many instances no pessary can be retained procidentia then occurs and the poor woman becomes a useless member of the community. These cases are not uncommon, there are thousands of them.

For several years I gave the operation of colpoperineorrhaphy a good trial, with considerable success so far as the operation was concerned. The perineum and vagina by this means can be reduced to a virginal form. If the patients are not allowed to get about for two months the new tissues have time to consolidate and in about two-thirds of the cases very little stretching takes place. When the fault lies with the pelvic floor the patient is greatly improved and is often restored to health, but in time the perineum without the help of the ligaments is unable to sustain the whole of the downward pressure and gradually gives way. In operations on the pelvic floor the chief structures concerned in holding up the uterus—viz., the ligaments—are left untouched. The method of treatment which I now bring forward is an attempt to strengthen the broad ligaments by appropriate means. This seems to me to be a more rational proceeding than attempting to form an unnatural ligament by attaching the fundus to the abdominal wall.

Let us consider prolapse of the uterus as a dislocation and compare it with what takes place when dislocation in an ordinary joint—say the ankle—occurs. In the latter case the sudden wrench which produces the dislocation causes laceration or stretching of the ligaments and bruising of the surrounding tissues. The irritation thus set up produces an effusion of lymph which repairs the damage and new adhesions form which strengthen the weakened ligaments. In many cases nature does too much, although she sometimes fails to do enough. Now, when prolapse of the uterus occurs the dislocation in nearly every case is so gradual and is spread over so long a period of time that the surrounding tissues are able to accommodate themselves. There is not sufficient injury to set up irritation and no effusion of lymph takes place to strengthen the overstretched ligaments. After thinking it over I could see no reason why we should not take advantage of this physiological function and supply the stimulus necessary by the injection of a suitable fluid into the cellular tissue of the broad ligaments and thus force nature to do her proper work. Moreover, it is common knowledge that after an attack of pelvic cellulitis there generally remain some adhesions sufficient to prevent a prolapse. It might be urged that there is a risk in setting up reparative action. In answer to that I would say that it depends upon how it is done. If all germs are excluded the reaction set up is proportionate to the stimulus applied, the only variations being due to age and idiosyncrasy. I suggested this in my first paper, and I have since found in practice that it is correct. That inflammation is a disease, as our forefathers thought, cannot now be accepted. In the light of modern research we must regard it as a reparative and protective process. No hard-and-fast line can be drawn between the effusion of lymph for the repair of a mechanical injury and the acute inflammatory process produced by toxins; they are both gradations of the same protective power. Undoubtedly inflammation may be so violent as to cause local injury, but this very violence will locally block the entry of bacteria into the general system or by suppuration get rid of a foreign body harmful to the tissues and life is saved at the expense of some local damage.[1] Like the structure of the body the phenomena of inflammation have in all probability been gradually evolved with other physiological functions by natural selection in the long distant past before man had learnt the use of a stone axe or even left the ranks of the quadrupeds. And just as the body produced by natural selection is in some respects imperfect in structure so also is inflammation not altogether perfect as a reparative and protective process, but sometimes it requires to be controlled by the physician and either curbed or spurred according to circumstances.

As an instance of the protective power of inflammation may be mentioned the gluing together of surfaces round ulcerations in the stomach and intestines by which the general cavity of the peritoneum is shut off. This is only an example of what in fact may occur in any part of the body when an injury calls for its manifestation. For the surgeon to use inflammation as a reparative process under his own control is no new principle; it has been extensively used for chronic hydrocele of the tunica vaginalis and in stimulating

[1] Brit. Med. Jour., Oct. 23rd, 1897.

the ends of an ununited fracture of bone by driving in ivory pegs or by other means. I fail at present to see any reason why this reparative process should not be used by the gynæcologist to strengthen the broad ligaments and so help to keep up the uterus. It is not meant to supersede all other treatment, but when other means have failed and as an adjunct to what has already been done. When the perineum is ruptured it should be sown up and all other measures which are likely to restore the tone of the pelvic floor should be used. If the uterus is enlarged it should when possible be reduced to its normal size, while a great many cases can be restored to health by rest and other simple means.

The anatomy of the broad ligaments requires careful consideration. Under normal conditions they are bounded anteriorly and posteriorly by two folds of peritoneum which leave the sides of the uterus and pass outwards and somewhat backwards to the sides of the pelvis. Above are the Fallopian tube and the junction of the two peritoneal folds; below are the pelvic floor and the vaginal fornix; on the inner side is the uterus with its artery and veins, and on the outer the wall of the true pelvis with the obturator internus. The space thus enclosed is filled with cellular tissue, lymphatics, and blood-vessels. This cellular tissue—called by Virchow the parametric connective tissue—is of the greatest importance, for its presence renders this treatment possible. It is most dense near the uterus and when followed outwards continues on to the upper part of the side wall of the true pelvis. It is more or less continuous with that in the iliac fossa and under the peritoneum at its different points of reflection in the pelvis (Hart and Barbour). In the normal woman able to go through a good deal of physical exertion without any ill result a band can be felt through the vaginal fornix on each side of the uterus in the broad ligament between the uterus and the pelvic wall.

Dr. J. C. Webster, speaking of the broad ligaments, tells us:[2] "The peritoneal covering is of very little practical importance in supporting the uterus. Within this covering is fibro-muscular and elastic tissue which can be traced as bands in several places running from the uterus to the pelvic walls. If the slightest downward pressure is made on the uterus in the cadaver it is found that a line of resistance is formed in the broad ligament running from the cervix upwards and outwards towards its upper parietal attachment." Sir William Turner says that they act as lateral ligaments for the uterus. In the operation of vaginal extirpation of the uterus after the organ has been separated from its vesical and vaginal connexions, although the vagina be distended as widely as possible the uterus does not tend to fall down, but is kept in position by its ligamentous attachments. When the uterus is pulled down and then let go it is instantly drawn up again. Dr. Savage[3] considers the broad ligaments to be of great importance in holding up the uterus. All this evidence gives strong support to the treatment brought forward. The uterine artery leaves the pelvic wall just above the ischial spine, but continues to descend downwards and inwards towards the cervix; it then makes a bend upwards, crosses the ureter, and reaches the uterus just above its junction with the vagina. It runs up the side of this organ in the folds of the broad ligaments and finally anastomoses with the ovarian artery. The uterine veins accompany it and form a plexus along the side of the uterus. To look at some of the plates in the text-books one would think that the whole of the broad ligament was one mass of veins, but this is by no means the case. If the broad ligament be opened up in its outer two-thirds by an incision through the vaginal wall, as I had to do in Case 5, it will be found that there are no veins to be seen and that the vaginal incision and also a deeper one into the cellular tissue causes practically no bleeding. The ureter on entering the pelvis crosses the common iliac near its bifurcation and runs downwards and forwards in front of the anterior branch of the internal iliac, passes obliquely along the base of the broad ligament, and is crossed to the outside by the uterine artery. At the level of the internal os it turns forward and at a distance of half an inch from it runs along the side of the vagina, finally bending over it so as to enter the junction between the vagina and the bladder. There is therefore a space in the outer two-thirds of the broad ligaments free from any structure of importance except the cellular tissue. If a point then be chosen in the vagina from about three-quarters of an inch to an inch from its junction to the cervix and on a level with the external os and a needle is inserted to a depth of one inch in a direction parallel to the side of the uterus the point will be in the cellular tissue about the middle of the broad ligament and quite clear of any structure which should be avoided.

It was a long time before I could make up my mind as to the best means for producing an effusion of lymph. The treatment of hydrocele by injections was not much of a guide because cellular tissue is very different from a serous membrane. The strength of solutions used to obtain adhesions of the tunica vaginalis would cause sloughing of cellular tissue. At the suggestion of my friend Dr. Aikman of Guernsey I tried quinine. It has many advantages, being strongly antiseptic, more tonic than poisonous to the general system, and at the same time acting as a local irritant. There can be very little doubt that after the injection the quinine is deposited. If any absorption takes place it must be very slowly for none of the patients have ever had the slightest sign of the usual symptoms which follow the administration of a large dose of quinine by the mouth although as much as 16 grains has been injected at a sitting. Quite possibly other reagents would do as well or perhaps better. As I find quinine answers the purpose I have not tried anything else.

Operation.—The patient is placed in the lithotomy position. The vagina is thoroughly douched and rendered as much aseptic as possible. The perineum is then retracted with either Auvard's or Sims's speculum. Another retractor is then used to hold up the anterior wall of the vagina if necessary. The lateral walls are then exposed. The uterus is held with one hand as nearly as possible in its normal position by a probe passed into its interior. With the other hand the injections are made on each side through the vaginal wall into both broad ligaments on a level with the external os and from about three-quarters of an inch to an inch from the junction of the vagina to the cervix. After the syringe and speculum have been withdrawn it is necessary to keep the uterus up with a cup and stem pessary held in position by four tapes tied round the waist. This is left in position for three or four days and is then removed. A special syringe with a long, thin nozzle is a great convenience because it does not obstruct the light and it enables the operator to see that the needle-point pierces the vaginal wall at the right point. The needle should not be more than an inch in length or much thicker than a hypodermic needle in order that the puncture may close quickly.

CASE 1.—The patient was a woman, aged 61 years, who had been suffering from prolapse for seven years and from procidentia for four months, with extensive ulceration of the cervix from friction. One injection was given in June, 1897, into each broad ligament. At the end of two months she left the hospital feeling very well and free from pain. When she stood up and strained as much as possible she was unable to cause any prolapse of the uterus; a slight thickening could be felt in each fornix, while the normal mobility of the uterus was but little if at all impaired. The vaginal walls bulged slightly at the vulva when she strained, but much less than before as the uterus was held up. At the end of six months (Jan. 3rd, 1898) I examined her and as the improvement was maintained I determined to go on with other cases. On Dec. 12th, 1898, I saw this patient again and examined her—one year and six months after the operation. She had been at work all this time. When she stands and bears down as much as possible there is no descent of the uterus. She feels very well and I was very pleased with the improvement in the poor woman's condition.

The following are the abbreviated notes of the other nine cases.

CASE 2 (hospital case).—The patient was a woman, aged 37 years. She was admitted to hospital on Jan. 24th, 1898. She had had two children. Prolapse had been present for 10 years and procidentia for three years. The uterus was enlarged. There was profuse discharge. The pelvic floor was weak and the perineum was stretched. She was unable to hold a pessary. She had incontinence of urine at times. On Feb. 3rd an injection of 20 minims of a solution of quinine (10 grains to the drachm) was given. On the 6th the uterus was held up by effusion. There was no rise in temperature. In April, 1898, there was some stretching of the new tissue and the uterus descended about an inch from the normal. In June, 1898, the cervix came down to the vulva to come in

[2] Researches on Female Pelvic Anatomy, p. 88.
[3] Anatomical Illustrations of the Surgery of the Female Pelvic Organs.

for a second injection. On July 11th operation was performed without any anæsthesia; quinine solution (one in five) was injected into both broad ligaments. On July 20th effusion was good. The uterus was well held. The temperature was normal. In October the uterus kept up in good position. She had been at work.

CASE 3 (hospital case).—A woman, aged 39 years, was admitted to hospital on Jan. 24th, 1898. She had had eight children. Prolapse had been present for two years and procidentia for one month. She had severe pain in the back. She could not retain a pessary. Incontinence of urine was present at times; the discharge was profuse. She had a short perineum. On Feb. 10th an injection of 25 minims of solution of quinine (one in six) was given. Her temperature was normal. There was good effusion; the uterus was well held up. The patient wrote on June 22nd: "I am at work in a laundry, so cannot come to see you. I am better than I ever thought to have been, but not so well as I should like to be." In December, 1898, the uterus was in good position. There was no prolapse. She had been hard at work without a pessary.

CASE 4 (hospital patient).—A woman, aged 44 years, was admitted to hospital in February, 1898. She had had five children. She had had severe prolapse and procidentia for 15 years. She could not retain a pessary. There was incontinence of urine at times. The uterus was enlarged and heavy. The pelvic floor and vagina were very weak and relaxed. On Feb. 24th an injection of 25 minims of solution (one in six) was given. Her temperature was 100° F. for two days and then normal. In June, 1898, the broad ligaments were not strong enough; the uterus still descended. On August 4th a second injection of 30 minims of solution (one in five) was given, the patient being under ether. On the 11th effusion was good. There was no rise in temperature. On the 25th colpoperineorrhaphy was performed. There was good union in September. In December, 1898, there had been no return of the procidentia. The uterus kept up fairly well. The patient wears a pessary.

CASE 5 (hospital case).—The patient was a woman, aged 29 years. She had had but one child. She was admitted to hospital on March 4th, 1898. Procidentia had been present for 18 months after her confinement, with incontinence of urine. She had tried seven different pessaries. The pelvic floor and vagina were fairly good. On March 10th an injection of 25 minims of solution (10 grains to the drachm) was given. The needle broke off in the left broad ligament. It was cut down upon and removed. On March 17th the sutures were removed and the wound healed. There was no pain or discharge and no rise in temperature. On June 22nd the uterus was in a very good position. On standing and straining there was no descent whatever. The patient felt very well. No pessary was required.

CASE 6 (hospital case).—The patient was a woman, aged 46 years. She had had nine children. Prolapse had been present for seven years. Procidentia began four years ago. The perineum had been repaired three and a half years ago; it was better for 12 months. Procidentia recurred 12 months ago. The pelvic floor and vagina were weak and lax. The left broad ligament was fairly strong. The right gave way completely. She had an irritable bladder. On March 21st, 1898, an injection of 25 minims solution (10 grains to the drachm) was given with the patient under ether. A second injection was given on March 31st of the right broad ligament. There was sufficient effusion. The uterus was well held up. There was no trouble with the bladder now. She had slight pain in the left side. There was no rise in temperature. On May 19th the uterus kept up well. On June 22nd the patient was going on well; there had been no prolapse. No pessary was required.

CASE 7 (hospital case).—The patient was a woman, aged 55 years. Prolapse had been present for 12 months and procidentia for four months. She could not retain a pessary. The pelvic floor and vagina were weak and very distensible. There was a yellow discharge. On March 17th an injection of 25 minims of solution (10 grains to the drachm) was given. On April 4th a second injection was given as before. The uterus was well held up. There was less effusion than in other cases. The temperature, after the first injection, rose to from 101° to 102° F. the day following. It was normal after the second injection. There was no pain. She was discharged on April 16th. On June 16th she felt very well and was quite comfortable. She had been at work for a month. On examination the uterus was in position and was well held up by the bands on each side. On Dec. 12th, 1898, the uterus was in good position. There had been no descent. No pessary was required.

CASE 8 (hospital case).—A woman, aged 51 years, was admitted into hospital on March 18. She had had 10 children. Prolapse had been present for 10 years and procidentia for three years. She could not retain any pessary. There was profuse offensive discharge. She could not micturate when the uterus was down. The family history was good. The pelvic floor and vagina were very lax. On March 24th 25 minims of solution (10 grains to the drachm) were injected with the patient under ether. There was less effusion than usual. On April 14th an injection of 30 minims (10 grains to the drachm) was given, cocaine anæsthesia being employed. On the 25th an injection of 40 minims of the same solution was given. There was a fair amount of effusion. The temperature rose to 100° F. for three days after the first injection; there was no rise with the second and third. On June 22nd the uterus kept up well. There was slight descent on straining and some cystocele; the patient felt very much better and had been doing her work. She wore a ring pessary. In December she was very well; there had been no prolapse.

CASE 9 (private case).—The patient was a woman, aged 66 years, who had been under the care of Dr. Aikman of Guernsey. She had had one child. Prolapse had been present for 12 years and procidentia for six years. She could not retain a pessary. There had been retention of the urine with procidentia. On April 8th, 1898, chloroform was administered by Dr. Webster and with Dr. Aikman's assistance 30 minims of solution (12 grains to the drachm) were injected into each broad ligament. There was no rise of temperature. The uterus was held up. Dr. Aikman wrote on June 25th: "I saw the patient at the end of her day's work. The fixation of the uterus is perfect and she is most grateful. She has been a great deal about and is doing all her housework. It is certain she did not take the full amount of rest which was advised for her, but that is only further testimony to the success of the treatment." On Dec. 10th, 1898, Dr. Aikman wrote: "The patient is quite well. She goes about without any inconvenience and is profoundly grateful to you."

CASE 10 (hospital case).—A woman, aged 65 years, came into hospital on April 23rd, 1898. She had had a family of 10 and five miscarriages. Prolapse had been present for 36 years and procidentia for 25 years. Incontinence and retention of urine were frequent. The whole of the pelvic floor gave way. She could not retain a pessary. On April 28th under ether 40 minims of solution (12 grains to the drachm) were injected. There was very little effusion. On May 9th (cocaine anæsthesia) 35 minims of the same solution were injected. Effusion was more marked. On May 26th (cocaine anæsthesia) 40 minims of the same solution were injected. The temperature after the last injection rose to 102·5° F. and fell to normal on the fourth day. Effusion was satisfactory. The slight pain and tenderness in the pelvis disappeared in three days. On June 13th she had been up for three days and felt nice and comfortable. On June 21st she went to a convalescent home. The uterus was in a very good position; there was no prolapse whatever. The patient wears a ring pessary. In December she was very well and had had no prolapse, remaining the same in January, 1899.

Remarks.—In all these cases prolapse had existed for years, and in Case 10 actual procidentia for twenty-five years. All other treatment having been tried without success they may be considered as good test cases and much worse than the average woman with prolapse condemned to wear a pessary for the term of her natural life. In most of the cases an anæsthetic was given. As the operation does not take more than five or 10 minutes it is not necessary but preferable. In lieu of that, two tampons soaked in a 20 per cent. solution of cocaine placed one in each fornix for a few minutes prevented the insertion of the needle from being felt. When the quinine solution was injected it sometimes caused no pain, in others slight pain. The legs must be held immoveable in a Clover's crutch or other arrangement. The object of inserting a pessary for a few days after the operation is to make sure that when the effusion does take place it will hold the uterus in a good and not in a bad position. After the operation most of the patients have practically no pain. There is a slight aching in the pelvis for a day or two. At the end of a few days the pessary is removed. On examination it is then found that the uterus is held up and when the patient strains

as much as possible no prolapse occurs. In both fornices some effusion in both broad ligaments can be felt with a little tenderness. The amount of effusion will depend on the personal reaction of the individual and the strength and amount of the solution injected. The swelling is not hard like a parametritis, nor is it at all extensive, but feels more like a band in most cases, passing from the uterus to the wall of the pelvis. It is firm and resilient. The uterus is held in position, not fixed; but still it has mobility. In Cases 8 and 10 the amount of effusion was much less than in the others. Both of them were old women with an excellent family history and large families of their own, and with the exception of the procidentia enjoyed good health. They were both thin and wiry, but gave the impression of being aged prematurely. The effusion also felt more localised in one spot and less of a band than in the others. On this account, and because the procidentia was more marked the injections were repeated. At first enough was not done for Cases 2 and 4. The reduction in the strength of the solution from that used in the first case was too great (from 15 to 10 grs.) and more than one injection was required. It takes some experience to know how much effusion is necessary in each case to afford permanent support. The number of injections must be proportioned to the exigencies of the case. Sometimes very little may be sufficient to restore the balance; in others, such as Case 10 where the procidentia had existed for 25 years and where the perineum had given way altogether a great deal of strengthening may be necessary to enable the ligaments to do their own work as well as that of the pelvic floor. There is no need for any rise of temperature to take place. In six cases (Cases 2, 3, 5, 6, 9, and 11) the temperature remained normal. Two cases touched 100° F.; only one, Case 10, reached 102·5° after one only of three injections. The patients seem to do just as well whether they have a slight rise of temperature or not. In fact I do not find any difference in results. There was no suppuration in any of these nine cases, although it has occurred in a recent case which will be published in its turn with my next series. The patient in the first case felt no ill-effects from slight suppuration, while she has been much benefited by the uterus keeping up. Nearly all these patients might have got up at the end of a week so far as the operation was concerned. But the object in view was to obtain organisation of the lymph so as to give permanent support in the broad ligaments.

As I stated in my preliminary notice we do not at present know why absorption of an exudation should take place in one case and organisation in another. Empiricism helps us by the observation of injuries to joints. A severe sprain to a healthy man or woman causes swelling from the effusion of lymph thrown out around the joint and after the subsidence of the inflammatory reaction adhesions begin to form and in many cases more than are required. To combat this passive movements and massage are resorted to. On the other hand, the longer the joint is kept in a splint and at rest the greater the number of adhesions which will form. If we apply this lesson to the pelvis we at once see the necessity of keeping the patient as nearly in a splint as possible and that is in bed for a month or two, not only to promote organisation of the lymph thrown out but also to prevent any strain until it is strong enough to bear it. The risk does not appear to be very great, all the patients having recovered from the operation. I mentioned in my first paper that one might expect considerable disturbance in the normal relations of the pelvic organs as a result of procidentia even after the uterus had been reduced and kept in place for a few days or a week and the needle under these circumstances might pierce some structure which we would wish to avoid. This, I think, would be more likely to occur in the worst cases of procidentia, but then the worse the case the more justification for running some risk on account of the helpless condition of the patient. As the needle is barely larger than a hypodermic needle it would probably not do much harm if it did pierce other structures than those intended. Then the solution of quinine is antiseptic. Dr. Anna[4] found that the injection of the bichloride of quinine into a vein or artery caused no coagulation and that there was no danger attached to it. A complication did occur in Case 5 which I had not expected. The needle which had become corroded by the quinine solution broke off in the left broad ligament. An incision was made through the vaginal wall over the point of insertion and again into the cellular tissue and the needle was extracted. No veins were to be seen and there was practically no bleeding, so I do not think there need be much fear of a hæmatoma from the injections. The incision healed by primary union and the patient did admirably.

We may, I think, compare procidentia with fibroma of the uterus in that it is rarely although sometimes a fatal disease and one which incapacitates the patient from the duties of life. If, then, a mortality of from 10 to 15 per cent. is justified in the surgical treatment of fibromata we are certainly justified in running some risk in the treatment of procidentia because up to the present these cases have been given up as incurable. By holding the uterus up in good position cystocele and rectocele in rather more than half the cases disappeared, and in the rest were greatly diminished. When there is still some bulging of the vaginal walls in spite of the uterus being kept up I find that a ring pessary does away with it and makes the patient quite comfortable.

Queen-street, Mayfair, W.

[4] Il Policlinico, March, 1897.

FURTHER REMARKS ON THE OPEN METHOD OF ADMINISTERING NITROUS OXIDE GAS.

BY GEORGE FLUX, M.D. BRUX., M.R.C.S. ENG., L.R.C.P. LOND., L.S.A.,

ANÆSTHETIST TO THE GREAT NORTHERN CENTRAL HOSPITAL AND TO THE BRITISH LYING-IN HOSPITAL; ASSISTANT ANÆSTHETIST TO THE DENTAL HOSPITAL OF LONDON; LATE ANÆSTHETIST TO THE NATIONAL DENTAL HOSPITAL.

SINCE first drawing attention in THE LANCET of Oct. 8th, 1898, to a plan which I had devised for inducing anæsthesia with nitrous oxide gas with an open inhaler, avoiding the use of valves or closed face-piece, and making use of a normal atmospheric pressure, I have been regularly employing this method both in my private practice and in hospitals and so far have found that further experience bears out my opinion of its practicability and efficiency and also as to the increased comfort which it secures to the patient. In a consecutive series of 250 unselected cases of which I have kept notes the results have been almost uniformly satisfactory.

It has been repeatedly demonstrated that with an accurately fitting closed inhaler the violent physiological disturbance of the patient can be much modified by the *intentional* admission of a little air or oxygen. The doctrine that a face-piece when applied must be air-tight has, in my opinion, been a stumbling-block to progress in the administration of nitrous oxide gas for many years, since it begets the conclusion that to admit air must interfere with the effect of the gas. I venture to think that this conclusion is erroneous and that the difficulty with an ill-fitting face-piece depends not so much upon the ingress of air as upon the very rapid escape of the heavier nitrous oxide gas. Letting air in is by no means the same thing as letting the gas out. In the former case the quantity of gas available for the patient is not necessarily diminished; in the latter it is very much so, especially if the escape of gas is very free, as often happens when the patient has much hair upon the face. Under the circumstances, unless the pressure of gas is very materially increased to compensate for what is lost by leakage, the patient will not be able to absorb a sufficient quantity to render him completely anæsthetic, although he inspires enough to render him excited and unruly. By the use of an inhaler which is completely open to the air at the top and into which the gas is allowed to fall from the end of a supply-pipe held over it the full anæsthetic effects of nitrous oxide gas can be obtained. If the inhaler is accurately applied to the face there cannot be any escape of gas, unless due to overflow resulting from too free a supply. The weight of the gas prevents escape upwards and unless leakage is permitted between the margins of the inhaler and the face there can be no escape downwards. If an ordinary pint pot is filled with nitrous oxide overnight and left uncovered and undisturbed a considerable proportion of the gas will still be there in the morning. A mouse placed at the bottom of an unclosed vessel into which a little nitrous oxide gas had been poured remained perfectly

anæsthetic for five and a half hours and on removal recovered completely in one minute. The gas when given in the open inhaler being freely exposed to the air and mixed with it can only be inhaled at the atmospheric pressure and the pressure can neither be increased by an excess of gas nor lowered by a reduced supply. The gas as it falls into the inhaler by its own weight is warmed by the breath of the patient and by the surrounding atmosphere—an important point when the cold produced by the rapid evaporation of the gas on leaving the cylinders is remembered. From a hygienic standpoint there is a very wide difference between an inhaler which is open to the air and unconnected with anything and one which is completely shut off from the surrounding air and is connected by tubes and valves to indiarubber bags, all of which are admittedly most difficult to keep pure and into and out of which both the healthy and the unhealthy must breathe. It will be seen therefore that with the open inhaler several conditions are absent which are present to the discomfort and disturbance of the patient when a closely-fitting air-excluding mask is used—viz., the cutting off of the air-supply, breathing under artificial pressures, the breathing of cold gas, the possibility of tuberculous infection, and minor discomforts, such as the smell of the gas bag, the whistling of the gas, and the noise of the valves.

The effects produced upon the patient when gas is given with the open inhaler are generally as follows. After the first few breaths the agitation caused by apprehension subsides; the patient assumes a sleepy appearance and in from five to 10 seconds is unconscious; the breathing becomes steady and tranquil; and by the end of from 50 to 80 seconds the patient is anæsthetic, with the muscles relaxed and the reflexes abolished. The only visible sign is the change from a condition of wakefulness to sleep which is so tranquil that onlookers who have not previously seen this method employed can scarcely believe that the patient is ready for operation. Movement seldom occurs before the commencement of return to consciousness which is usually gradual. No excitement, stertor, lividity, struggling, or convulsive movements occur. In no case of the above-mentioned series has it been necessary to use force to restrain the patient during or after the exhibition of the anæsthetic. Occasional instances of screaming have occurred on recovery, the patients being nervous women, weak and ill, who had previously screamed under other methods. The symptoms of asphyxia which so frequently accompany the use of gas anæsthesia when an accurately-fitting, air-excluding mask is used are completely absent when this method is employed.

I have asked several well-known physicians to watch cases for me and although the administrations have lasted up to periods of 11 minutes they have observed no change in the patients beyond a slight increase of pulse-rate during the first few moments of inhalation, the pulse and respiration soon settle down to a quiet, unchanging rhythm. It was impossible to determine, however, whether the initial slight increase in pulse-rate was due to agitation or to the anæsthetic. The return to consciousness when the patient is not disturbed is placid and tranquil; he quietly opens his eyes, looks about him, realises his position, and behaves according to his temperament. If the operation is continued beyond the duration of true anæsthesia signs of apparent discomfort will appear before clear consciousness is established. The most constant early sign of returning sensibility is a slight "screwing up" of the eyelids, followed by slow, vague movements of the limbs which will quickly, but not abruptly, become defensive if the operation is continued.

In spite of many experiments as to size and shape of face-pieces and of variations in the manner of regulating the gas-supply inseparable from attempts to decide upon the most practical procedure, complaints of unpleasant after-effects have been few and far between and even when present have been of very transient nature. In several cases where the operations have lasted several minutes and the patients have been under constant competent observation both before and after no subsequent ill-effects have been observed. In one instance a lady was under gas by this method for four and a half minutes for removal of a Meibomian cyst and she felt no subsequent disturbance; she had taken gas on several previous occasions and had always been sick for three days.

Up to the time of my first communication on this subject I had simply used as an open inhaler some textile fabric—e.g., a napkin or towel folded and adapted to the face in such a manner that the nose and mouth were partially enclosed in a more or less cup-shaped cavity completely open at the top. As an extemporised face-piece is not always convenient I have had some more permanent inhalers constructed which give very satisfactory results. These inhalers are made in two forms, one cylindrical in shape for use when the patient is lying down (Fig. 1); the other somewhat cup-shaped when in position for use when the patient is sitting up (Fig. 2). A glance at the accompanying sketches will show the appearance of the face-pieces when in use. The material used in their construction is clear, thin celluloid—a substance which is at once light, transparent, and very pliable; it is non-absorbent and can be easily and rapidly cleansed. The somewhat cylindrical inhaler (Fig. 1) is completely open at either end and is flattened from side to side; the upper end is straight, but the lower is curved and

FIG. 1.

provided with an air-cushion in order that it can be easily fitted over the nose and chin and rest evenly upon the face of the patient. The long diameter of this inhaler should correspond to the distance between the bridge of the patient's nose to midway between the lower lip and the point of the chin and the narrow diameter to the extreme width of the patient's mouth. The depth of the inhaler should be equal to the sum of the long and narrow diameters. The other inhaler (Fig. 2) is formed of a wide piece of celluloid

FIG. 2.

bent so as to form a semicircle, into the side of which the face looks. The space thus formed is freely open at the top, but closed at the bottom by a celluloid floor which is continuous with the sides; the floor is curved downwards from side to side in order to facilitate cleanliness and to render it more comfortable to the patient. The free margin of the floor is curved in order that it may fit the face of the patient

when applied either below the lower or above the upper lip. The sides of the inhaler reach from the eyes to the upper part of the chin, and the opening for the face is sufficiently wide to clear the orbits on either side. The projection forward in the case of an adult is from three to three and a half inches. The margins where the inhaler comes in contact with the face are suitably shaped and are furnished with a soft air-cushion in order that accurate adaptation can be secured and loss of gas by leakage prevented. The inhaler for use when the patient is sitting up can be used for nose inhalation if required by placing the lower border above the mouth instead of below. I am indebted to Mr. J. H. Montague of 101, New Bond-street, London, for the manufacture of the inhalers and for his assistance and patience in carrying out my designs.

To render an ordinary adult anæsthetic by this method an average expenditure of from seven to eight gallons of gas is required, a further amount of three or four gallons for each additional minute will suffice to maintain anæsthesia. A patient does not inhale more by this plan when properly carried out than by any method which does not involve re-breathing of expired gas. The length of time which elapses between the removal of the face-piece and the return of consciousness is proportionate in a great measure to the length of time that complete anæsthesia has been kept up. As with other anæsthetics care must be taken that no mechanical obstruction to respiration, such as the falling back of the tongue, &c., is allowed to occur.

In conclusion I append a few of the more interesting cases which have been anæsthetised in this way.

1. The patient was a thin woman, aged 22 years, of fair, florid complexion. She was four and a half months pregnant. She dreaded the gas, previous experiences having been unpleasant. She went quietly to sleep and did not stir until after the dental operation was completed. There was no subsequent discomfort. She had no recollection of losing consciousness.

2. The patient was a woman, aged 22 years. She was lying down. The operation, which was on the hand, lasted 11 minutes. At first there was slight drawing up of one leg but otherwise she lay perfectly still. She was unaware of having "had any gas" as she had felt nothing. Within two minutes of the removal of the face-piece she expressed herself as feeling "as well as ever she did in her life."

3. A big, florid, strong man having had gas by the closed face-piece became so violent that no operation could be performed upon him. After an interval of 15 minutes gas was given with an open inhaler. The patient went quietly to sleep until the operation was completed when he awoke quietly. After the operation (the extraction of roots with an elevator) had continued for a minute and 45 seconds gas was readministered and the operation was continued for 40 seconds longer. The patient felt no pain and found the gas not unpleasant.

4. In this case the patient was a woman, aged 55 years, who had a large goitre. There was some dyspnœa which was always aggravated by pungent smells. She took the gas well and sank quietly into a sleep which was undisturbed by a change to ether. She remained quiet for 48 minutes. During the operation (laparotomy) there was no change of colour or difficulty in breathing from first to last.

5. The patient, an old man who was suffering from acute bronchitis and atheromatous arteries, was in bed. Gas was given for two and a half minutes. The patient manifested no change in appearance or breathing; he knew nothing. There were no after-effects. The operation was the incision of an abscess.

6. A girl, aged 15 years, was operated upon for the removal of a growth from the plica semilunaris. She was under the anæsthetic for three minutes and remained perfectly quiet. There were no after-effects and no sensation.

7. The patient, a girl, aged 19 years, was the subject of sapræmia, jaundice, and congestion at the base of one lung. The temperature was 104°F. and the pulse was 150. Anæsthetisation was commenced with gas and ether and was continued with chloroform. Laparotomy was performed for exploration. The patient recovered well from the anæsthesia. There was no vomiting or nausea.

In all cases where time is mentioned reference is made only to the actual duration of the operation as taken with a stop-watch.

Old Burlington-street, W.

CASE OF A FOREIGN BODY IN THE ALIMENTARY CANAL ULCERATING ITS WAY OUT THROUGH THE ABDOMINAL WALL.

BY F. PRYCE JONES, M.R.C.S. ENG., L.R.C.P. LOND.

FOR the opportunity of seeing, and for permission to report, the following remarkable case my thanks are due to Mr. D. Howell Thomas of Swansea who in his capacity of visiting medical officer to various public institutions had the professional care of the patient during the two periods involved.

The patient was a woman, aged 33 years, in whom a deficiency of intellect was to some degree compensated by an excess of cunning and to whom the common expression "a well-known character" in its less desirable sense would be applicable. In June and July, 1895, she was under observation for some weeks and during that time developed the habit of tearing up her clothing for no obvious reason; but careful watching resulted in the discovery that she was persistently swallowing shreds of the torn articles which on many occasions were detected in her stools. Various and stringent measures were taken to prevent the practice but they were of no avail and the habit was continued up to the day on which for a time she passed out of sight.

After a very brief interval she came under observation again at another place where, as before, she was not unknown and where the recently acquired habit of eating her clothing soon attracted attention and caused much trouble. Early in January, 1896, the woman began to complain of abdominal pain which was constant in character, limited in position to the epigastric and umbilical regions and not much affected by taking food. Up to the middle of February she was getting up daily, partaking heartily of ordinary mixed diet and, in fact, did not appear to be really ill. At this time emaciation commenced, the pain increased in severity, and tenderness on pressure became a prominent symptom; no definite swelling could be made out but resistance to palpation was marked. The patient was now kept in bed and given a lighter diet which she took well. The temperature began to rise, running up to about 102°F. in the evening. A week later a well-defined tumour of about the size of an orange could be felt situated just above the umbilicus and not deeply placed; before long there was obvious swelling, fluctuation could be obtained, and no doubt now remained that an abscess had formed and was making its way to the surface; hot fomentations were applied and as the abscess became more superficial it tended to expand downwards below the level of the umbilicus. When I first saw the patient she had been in bed for a fortnight. Upon our arrival one morning the nurse reported that the abscess had burst during the previous night with the escape of two or three ounces of foul-smelling pus. The dressings being removed it was found that pus was exuding from a very narrow orifice situated one and a half inches below the level of the umbilicus and three-quarters of an inch to the right of the mid-line. Mr. Thomas having enlarged the opening by means of a dressing forceps a coloured object could be seen lying in the pus within the cavity; this was secured and withdrawn—a proceeding which had a singular resemblance to a clever conjuring trick, for the foreign body proved to be a strip of coarse blue cotton material measuring nine and a half inches in length by from two to three inches in width, identified by the nurse as part of a day-gown usually worn by the patient; along with it were some small shreds of red and grey woollen stuff corresponding to the material of two other garments, but this identification did not enable us to determine how long a period had elapsed since the articles had been swallowed because the corresponding garments had been torn on several occasions. The abscess cavity was of about the size of a hen's egg and the sinus appeared to lead from its lowest quadrant—the most dependent part so long as the patient was up and about—and this was confirmed by the careful use of a probe.

From this time the patient improved very rapidly, the only treatment employed being syringing out with carbolic lotion; the sinus, however, persisted for a long time; it was not quite closed at the end of the year but two months later it was found to be soundly healed and the patient none the worse for her indigestible diet which since her illness had not been resumed. As recently as August,

1898, a small, clearly-defined, and sharply-depressed scar marked the site of the sinus. As to the treatment adopted it should be said that the general condition of the woman was at no time such as to give cause for alarm nor was the pain extremely severe, and so the surgical rule for promptly evacuating an abscess in the abdominal wall was ignored in favour of tentative treatment, the wisdom of this being finally vindicated by the result. All through the illness vomiting only occurred once or twice and the formation of the abscess was not accompanied by rigors; the absence of both of these symptoms in cases of "perigastric abscess" (which cases, it appears, have almost invariably a fatal ending) is remarked upon under that heading in Quain's Dictionary of Medicine. There was never any symptom of threatened intestinal obstruction. The sinus appeared throughout to be an ordinary sinus—that is to say, there was no evidence of its being a gastric or intestinal fistula. I have mentioned the small size of the external opening when first seen; an ordinary lead pencil would have been a close fit and so the possibility of the patient having inserted the fabric after the abscess had burst was quite negatived.

And now the question arises, From which part of the alimentary tract did the foreign body ulcerate its way? Without going into the anatomical and pathological *pros* and *cons* I do not think there can be much doubt that it was from the stomach.

Dobcross, Saddleworth.

NOTE ON THE OPERATIVE TREATMENT OF ECTROPION.

BY H. CARTER MACTIER, B.A., M.B., B.CH. DUB.

THE causes of non-cicatricial ectropion are sufficiently well known, as also are the methods of treating this deformity by operation—viz., Snellen's suture, tarsorrhaphy, and Kühnt's operation—and they need not be discussed here. I shall therefore proceed to describe the details of what I believe to be a new method of operation.

In September, 1897, while I was doing duty for the visiting surgeon to the Wolverhampton Eye Infirmary a man was placed in my charge who was suffering from a senile ectropion of the left side, the palpebral conjunctiva overhanging the skin for about two millimetres. This condition had arisen in the previous April. He had been operated upon for the relief of the deformity on August 14th, Snellen's suture being the method employed, but on the removal of the suture the lid reverted to its former faulty position and it was therefore necessary to adopt some other procedure. On Sept. 10th the patient was anæsthetised with ether and I performed the following operation. A Jäger's bone plate lid-holder being placed in the left conjunctival sac and being held in position by an assistant I made a curved incision with the concavity upwards parallel to and about two centimetres below the free border of the lid, the incision being about three centimetres in length. I then carefully dissected in an upward direction through the tissues, keeping posterior to the tarsal cartilage, until the conjunctival sac was exposed and freed from attachments except at its junction with the edge of the skin at the margin of the lid. The lid-holder greatly facilitated this part of the procedure. All hæmorrhage being stopped with pressure a fine silk suture was passed after the method of Snellen, the free ends being brought out just below the lower margin of the skin wound, then a double-pointed horsehair suture was passed from the bottom of the conjunctival sac and the free ends were brought out below those of the silk suture. Both sutures were then drawn tight and tied, the tension exerted being just sufficient to produce a slight amount of entropion and the hair suture holding the bottom of the freed conjunctival sac at the level of the wound in the skin, the last wound being then sutured with a few points of horsehair. Iodoform powder was dusted on and a Gamgee pad smeared with iodoform ointment (15 grains of iodoform to one ounce of vaseline) placed over both the eye and the skin wound, the whole being secured with a roller bandage. The wound healed by first intention and I removed the sutures on the fifth day, the result being excellent, as the accompanying figure, copied from a photograph which was taken a month after the operation, shows. I must express my regret at not having had the case photographed also when the deformity existed, since a comparison of its condition before and after the operation would have had still more interest for the reader.

The failure of Snellen's method in this case was, I believe, largely due to the fact that when that method was devised suppuration was the rule and asepsis the exception, therefore the suture, by causing a septic tract, produced cicatricial bands which contracted on healing and thus cured the condition, but now when suppuration is almost

a thing of the past the lid simply reverts to its faulty position when the suture is withdrawn. In the operation which I have described above the conjunctival sac and therefore the palpebral conjunctiva are pulled downwards and by healing in at a lower level draw the edge of the lid upwards and inwards thus producing a cure. The advantages I claim for this method are (1) that it is applicable to cases where Snellen's method fails, (2) that the scar left by the incision in the skin being in a natural fold is not so apparent as that of Kühnt which is vertical, and (3) that the tarsal cartilage does not require to be cut and the difficulty of bringing the two sides of a V-shaped incision together—a seemingly simple but practically very difficult matter—when doing Kühnt's operation is therefore avoided.

Wolverhampton.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON OCULAR PARALYSIS FOLLOWING HERPES FACIALIS.

BY ALFRED RUTTER, M.B., C.M. EDIN.

JUDGING from the literature on the subject danger from eye complications in cases of herpes zoster ophthalmicus involving the supra-orbital branch only of the first division of the fifth nerve would appear to be too infrequent to call for serious apprehensions. This statement would, perhaps, not apply in those examples of herpes in which the eruption occurs on the cutaneous area supplied by the nasal branch. Induced by these considerations I wish to place on record the details of a case now under my care in which ocular paralysis has become the most prominent and (to the patient) most troublesome, if not, in view of other possible contingencies, the most serious symptom.

On Jan. 3rd, 1898, I was asked to attend a man, aged 30 years, for a supposed attack of erysipelas commencing

over the right eyebrow. The history given of the case up to the time of my first seeing the patient was that common to most cases of herpes—viz., the primary patch of erythema followed by the vesicular stage, the entire patch being limited to the right side of the forehead and the nasal border of it defining most accurately the mesial line. Neuralgia in this instance began on the day preceding the first appearance of the eruption. A special feature about the arrangement of the vesicles which I think worthy of note was the tendency to confluence, and in consequence of this there was presented an uncommonly well-marked resemblance to that of pemphigus. The contents of the bullæ were at an early stage dark from admixture with blood. The neuralgic pains ceased on the third day, at which time there was nothing to indicate impending ocular trouble beyond the appearance of superficial congestion of the eyeball. There were brawny swelling and redness of the eyelids so that they could not be separated by any ordinary effort made by the patient. The eye, however, was carefully exposed each day and examined for evidence of iritis or impairment of vision from other causes, but these daily inspections revealed negative results until the tenth day, when upon examination the following condition was observed. The pupil was dilated and fixed, and was little affected by the use of eserine. The accommodation was paralysed, with micropsia, and there was crossed diplopia and divergent strabismus. The evidence supplied by the use of a lighted candle showed the superior internal and inferior recti to be affected and the inferior oblique less markedly so. The amount of ptosis which might exist from the now apparent implication of the third nerve was difficult to estimate from the difficulty of eliminating other obvious causes. A satisfactory ophthalmoscopic examination was also not easily made owing to the obstacle presented by the previously mentioned condition of the eyelids. Distant vision, however, was good. The prospect of the ultimate and complete recovery of the functions of the external ocular muscles which are affected, and the disappearance of the iridoplegia, &c. I think to be favourable, as these symptoms arise from a cause which is apparently peripheral and temporary.

The treatment adopted up to the present time has been that applicable to herpes, with a regular instillation of sulphate of eserine and rest to the eye. Massage and electricity with strychnine administered hypodermically will, I hope, form an appropriate treatment later. The employment of mechanical means to overcome the ptosis would form a necessary preliminary to the use of prisms, or a convex lens for near vision.

Ryhope, Durham.

A SUGGESTED MODIFICATION IN THE TECHNIQUE OF THE OPERATION OF PAN-HYSTERECTOMY.

BY C. E. PURSLOW, M.D., M.R.C.P. LOND.,
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THE operation of pan-hysterectomy or complete removal of the uterus, including the cervix, by combined abdominal and vaginal incision is coming into gradually increasing favour, and in my opinion is the best operation for most cases of uterine fibroids in which surgical treatment is indicated. The best description of this operation with which I am acquainted is one by Christopher Martin of Birmingham in the *Edinburgh Medical Journal* for March, 1896, and this description with its accompanying diagrams has been adopted in the text-books of both Lewers and Macnaughton-Jones. The identification and incision of the vaginal wall when reached from above by stripping off the bladder from the front of the uterus constitutes one of the main difficulties of the operation. Various directions are given by different authors for doing this. Thus Martin in the article above mentioned recommends that a strong Spencer Wells forceps should be pressed up against the vaginal fornix by an assistant, the operator cutting on to the point of the forceps with scissors. Webster advises that a sound should be passed up in the same manner and pressed against the fornix and Penrose, the author of an American text-book, says, "The position of the anterior vaginal fornix may be determined by palpation and percussion, a drum-like sound is obtained by snapping the finger upon the tense vaginal wall." I venture to point out a much simpler method than any of the above. The woman being placed in the lithotomy position the vaginal mucous membrane is incised all around the cervix and the separation of the cervix is carried up as far as may be convenient; in many cases, however, it will be found that the cervix is so lifted up by the tumour as to be almost out of reach, and little can be done beyond incising the vaginal wall. This step has been advocated and practised by several surgeons, but the additional modification which I would suggest and which I believe has not been brought forward before is that the vulsellum forceps which has been fixed in the anterior lip of the cervix should be left there until it has been reached by the finger from above in the second stage of the operation. I have adopted this simple manœuvre recently and have found that it gave very great assistance in a difficult part of the operation.

Birmingham.

REMOVAL OF A FOREIGN BODY FROM THE FOOT WITH THE AID OF THE FLUORESCENT SCREEN AND ROENTGEN RAYS.

BY E. W. DIVER, M.D. DURH., M.R.C.S. ENG., L.R.C.P. LOND.

THE case here recorded may be of interest as an illustration of the difficulty often experienced in finding a foreign body, even though a skiagram may clearly indicate its relation to surrounding structures, and of the comparative ease with which removal may be effected with the aid of the fluorescent screen.

A woman, 60 years of age, consulted me in August, 1897, stating that 10 years previously she had stepped on a needle which had broken, leaving a portion embedded in her left foot, and that ever since then she had suffered from pain varying in intensity, but at all times sufficient to make walking very difficult and occasionally impossible. A skiagram was taken and the fragment was clearly displayed lying apparently between the third and fourth metatarsal bones. On August 31st the patient was placed under ether in expectation that the foreign body would be easily found and removed, but though a diligent and somewhat prolonged search was made the operation was unsuccessful. On Dec. 11th Messrs. Brady and Martin of Newcastle-on-Tyne kindly sent the Roentgen ray apparatus to the patient's house and a second operation was performed. Before the administration of the anæsthetic the foot was carefully examined with the aid of the fluorescent screen, the rays being transmitted in various directions through it. In this way it was ascertained that the needle was lying parallel with, and between, the third and fourth metatarsal bones. Ether was then administered and an incision was made in the sole, but again the needle could not be found. An antiseptic pad was then placed over the wound and a small incision was made in the dorsal surface of the foot. The screen was placed against the sole and the vacuum tube about 12 inches from the dorsum; the current was then switched on and a small hook was inserted into the dorsal wound, the shadow of the hook and that of the needle being sharply outlined on the screen. By a little careful manipulation the hook was passed around the needle and the tube and screen were removed. Daylight being then admitted to the depth of the plantar wound, the needle was easily extracted. The wounds were healed on the eighth day and the patient made a good recovery.

Although a written description may make the proceeding we adopted appear to be awkward, in practice it was exceedingly simple. This method may be of value to those who have not at hand Mr. Mackenzie Davidson's very ingenious and elaborate apparatus for localising foreign bodies. My thanks are due to Dr. Horace Paige of Gosforth who kindly administered the anæsthetic on each occasion, and also to Dr. W. Martin, of the firm of Messrs. Brady and Martin, who has given much time and attention to the practical application of the Roentgen rays and to whose skilful manipulation of the apparatus the successful issue of the operation was largely due. So clearly was the shadow of the needle depicted upon the screen that Dr. Martin expressed the opinion, contrary to the emphatically expressed statement of the patient herself, that we had to deal with the eye end and, further, that the eye itself was broken. Examination of the needle after its removal proved the correctness of Dr. Martin's view. It was a portion of a darning needle and was one inch in length.

Jarrow-on-Tyne.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

MIDDLESEX HOSPITAL.

A CASE OF RAPIDLY GROWING OVARIAN TUMOUR COMPLICATING PREGNANCY; OVARIOTOMY; RECOVERY.

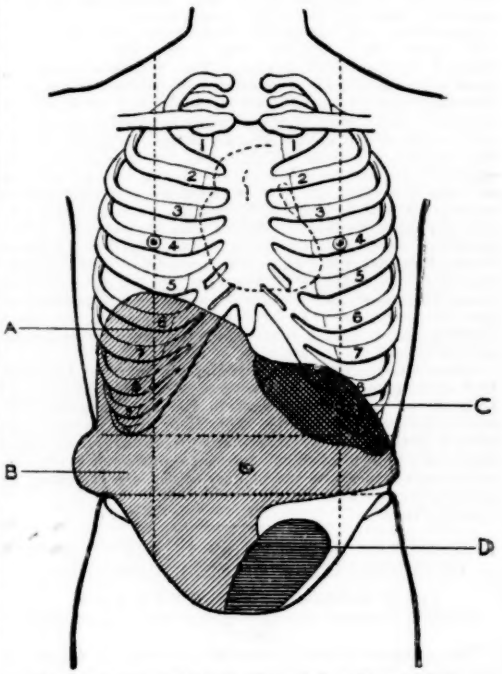
(Under the care of Dr. WILLIAM DUNCAN.)

IT would be difficult to find a case which exhibits more clearly than the one recorded below the diagnosis and the treatment of that most important complication of pregnancy, an ovarian cyst. It is not very long since many gynæcologists hesitated to attempt the removal of a cyst of the ovary when occurring during pregnancy from a fear that abortion was likely to occur. It is now recognised that on the whole there is much less danger from an ovariotomy during pregnancy than from the presence of an ovarian cyst during labour and that with ordinary care the risk of an abortion is extremely slight. For the notes of the case we are indebted to Dr. J. T. Wills, obstetric house physician.

A married woman, aged 21 years, was admitted into the Prudhoe Ward of the Middlesex Hospital on Nov. 29th, 1898, complaining of swelling in the abdomen. She was sent to Dr. Duncan by Mr. S. Peake of Shepherd's Bush. She was a pale, dark-haired woman. She had had two children; the last was born fifteen months ago. She had never been laid up apart from the confinements. Menstruation began at the age of 15 years and was regular every four weeks, and had lasted six days, two or three diapers being used daily. There was never any pain or headache. She had sometimes passed clots and shreds. She had no intermenstrual leucorrhœa. After the amenorrhœa consequent on her last pregnancy and lactation she had periods during seven months and the last period (from July 30th to August 5th) was normal in character. In June, 1898, the patient's friends told her that for some weeks they had observed that she was getting stouter, but she did not notice anything herself until September when she missed a "period." Since then she had been getting larger very rapidly, but she was unable to say where the swelling first appeared. Since September she had been unable to continue her laundry work, but had attended to her household duties. In October she had frequent but painless micturition. On Nov. 24th she had retention of urine and a catheter had to be used.

On admission the abdomen was much distended, being very prominent anteriorly and also somewhat prominent in the flanks, more especially on the right side. In the middle line there was a line of pigmentation running from the symphysis pubis to midway between the umbilicus and the ensiform cartilage. On palpation the abdomen was found to be occupied by a large swelling (with ill-defined edge in most parts) which reached (as shown in the accompanying illustration) from the costal margin to two fingers' breadth below the umbilicus on the left side, while on the right side it extended down to the pelvis; laterally it extended from the middle line six and a quarter inches on the left side and eight and a quarter inches on the right side. The surface of the tumour was smooth and fluctuation could be made out over the part lying to the right of the middle line. In the left hypochondrium a firm mass was felt, the long axis of which was inclined downwards and outwards; no definite separation of this from the cystic portion could be made out. There was dulness over the whole of the swelling and none of the dulness was modified by change of posture. The flanks were resonant. In the left lower part of the abdomen and rising out of the pelvis could be felt a pear-shaped, firm, elastic tumour (D) reaching to within four fingers' breadth of the umbilicus; over this a well-marked uterine souffle could be detected. Above this tumour there was a transverse depression separating it from the large swelling and at this line the percussion note was sub-resonant. The liver dulness (A) began at the fifth rib in the right nipple line and from this point downwards there was no resonant interval. The measurements of the abdomen were as follows: from the umbilicus to the right and left anterior superior iliac spines, 9½ inches and 9 inches respectively; from the umbilicus to the pubes and to the ensiform cartilage, 7½ inches and 6½ inches respectively; circumference of the abdomen at the umbilicus, 37¾ inches, and 2½ inches above it 38 inches. Per vaginam the cervix uteri was found to be anteposed; the os uteri was soft and patulous, admitting the finger tip. There was some violet discolouration of the vagina. The breasts were flabby and some dilated veins could be seen coursing over them and the areolæ were large and dark.

On Dec. 9th the patient was anæsthetised and an incision three inches long was made between the umbilicus and the pubes. When the peritoneum was opened about six



Ovarian tumour complicating pregnancy. A, Liver dulness. B, Cystic portion of the tumour. C, Solid portion of the tumour. D, Gravid uterus.

ounces of free fluid escaped. The gravid uterus was seen in the lower part of the abdomen, while above it was the cyst. The latter was tapped with a Spencer Wells trocar and 126 ounces of clear, greenish-yellow, somewhat tenacious fluid were withdrawn. The cyst wall was brought out through the incision and the opening into it was enlarged. A finger was then introduced into the cyst so as to break down the numerous smaller cysts in the more solid portion of the tumour; these contained thick gelatinous material. The whole tumour was next drawn out through the wound and was found to spring from the right ovary. The pedicle was transfixed and tied in the usual way with silk one and a half inches from the uterus. The left ovary and tube were found to be normal. The abdominal wound was closed in three layers: (*a*) fine continuous silk for the peritoneal edges; (*b*) interrupted silkworm gut for the sheaths of the recti; and (*c*) continuous fine silk for the skin. The wound was dressed with cyanide gauze and sal-alembroth wool and a flannel binder was firmly applied. The patient made an uneventful recovery with the exception that the skin incision was very slow in uniting.

Remarks by Dr. DUNCAN.—When an ovarian tumour

commences to grow coincidently with pregnancy it usually enlarges with increased rapidity (as seen in the above case). The diagnosis of this complication is sometimes exceedingly difficult. I have seen an extreme case of hydramnion diagnosed as ovarian cyst, but in hydramnion the intermittent uterine contractions can be felt, besides which some parts of the fœtus can be detected through the fluid. Usually when an ovarian cystoma complicates pregnancy the two tumours are separated by a longitudinal sulcus, but in this case the depression was transverse. Then, again, auscultation is very valuable, as a uterine souffle (and perhaps the fœtal heart) can be heard over the gravid uterus but not over the cystoma. There is at the present day a general consensus of opinion that the proper treatment of an ovarian tumour complicating pregnancy is to perform ovariotomy. Tapping a cyst is quite unjustifiable in my opinion, as one never can be certain of the nature of the cyst contents (especially of pelvic cysts), and the fact of pregnancy co-existing renders ovariotomy little (if any) more dangerous to the mother. Practically the only extra risk is that of causing abortion or premature labour. Particularly is this the case if there be adhesions between the uterus and the ovarian tumour. It has been recommended in the case of pelvic tumours to perform vaginal ovariotomy but personally I prefer in all cases to open the abdomen. I have removed two dermoid pelvic tumours in patients who were in the ninth and eighth months of pregnancy respectively and in both cases I was able to push the gravid uterus to one side of the abdominal cavity whilst the tumour was got up out of the pelvis and removed. When an ovarian tumour is detected for the first time after labour has set in the treatment will depend on the position of the tumour and also on the extent to which it interferes with the passage of the child. A cyst in the abdomen which is of moderate size and does not prevent the head from engaging in the pelvic brim may be left alone until after the puerperium; but when it is of large size and subject to injurious pressure it had best be removed by ovariotomy. The cases, however, which are most dangerous and difficult are those in which a tumour in the pelvic cavity (often dermoid in character) causes more or less obstruction to the passage of the child. As a rule these are not detected until labour has set in; when this is the case the first indication is to try to push the mass out of the pelvis by means of vaginal or rectal manipulation when the patient is completely anæsthetised. In the event of this proving successful the uterus should be pressed down so as to prevent the tumour falling back and delivery effected by forceps as soon as the os uteri is sufficiently dilated. After the reduction of such a tumour the patient must be carefully watched during the puerperium for signs of suppuration of the tumour or twisting of its pedicle; either of these complications calls for immediate ovariotomy, otherwise the operation can be deferred until the patient is convalescent after her confinement. But supposing that the tumour cannot be pushed up out of the pelvis, what, then, is the best course to adopt? It has been recommended to puncture the tumour, draw off its fluid contents, and then deliver the child either by the forceps, version, or craniotomy; but although successful cases of this kind are recorded it is a method of treatment which in my opinion exposes the mother to too great risk, whilst it at the same time usually involves sacrificing the child's life. If I had to deal with a case of labour complicated by a pelvic tumour I should first attempt (under anæsthesia) to push the tumour above the pelvic brim. Failing in this I should be guided in the further treatment by the surroundings of the patient and the presence or absence of skilled assistance. With good assistance and surroundings I should open the abdomen, push the gravid uterus to one side (or even bring it outside), then pass my hand into the pelvis, bring up the tumour, remove it, and close the abdomen in the ordinary way, subsequently completing delivery with the forceps. But if the tumour was found to be matted in the pelvis by numerous and dense adhesions I should perform Cæsarean section and having carefully sewn up the uterine incision I should proceed to remove the tumour. In a case, however, in which the hygienic surroundings were bad and skilled help was unattainable the best course would probably be to make an incision into the tumour through the posterior vaginal wall, scoop out as much as possible of its contents with the finger, then pass some iodoform gauze into the cavity, and deliver the child by forceps or version.

ROYAL INFIRMARY, LIVERPOOL.

A CASE OF GUMMA OF THE LIVER TREATED BY OPERATION.

(Under the care of Mr. RUSHTON PARKER.)

THE diagnosis of gumma of the liver is often extremely difficult and the nature of the swelling may not be recognised until an incision has been made into it. When this has been done there can be little doubt that removal of more or less of the contents will prove beneficial, for the amount to be acted on by the anti-syphilitic treatment will be materially diminished. At a meeting of the Clinical Society of London in November of last year Mr. W. G. Spencer read an interesting paper[1] on Three Cases on Gumma of the Liver in which operation was followed by relief. One of these closely resembled the case under the care of Mr. Rushton Parker recorded below. The fact that medical treatment will suffice to cause the absorption of a gumma need in no way deter us from removing in whole or in part these swellings if they have for any reason been incised. In the skin the healing of many gummatous ulcers is often accelerated by scraping.

A man, aged 29 years, was admitted into the Royal Infirmary, Liverpool, on June 17th, 1898, suffering from pain and a swelling in the region of the gall-bladder. About two years previously he had had abdominal pain, vaguely described, but no swelling. After medical treatment for a month he was relieved. About five months before admission a convex swelling which was attended by increasing pain had appeared below the right costal margin and behind the abdominal wall. The swelling was about two inches wide, was continuous with the liver dulness, and moved downwards with inspiration. There was no jaundice and no diagnosis was made beyond a suspicion that it might be a distended gall-bladder. An operative exploration was undertaken on June 27th through a slit in the right rectus muscle exposing the lump which was found to be in the liver. The convex projecting portion was cut into and proved to be only part of a very large structure which extended some four or five inches in each direction and was evidently a gumma, being composed of grey, friable, lymphy, fibrinous material. Not more than a third or a fourth part was capable of safe removal and under a stream of hot water the divided margins of the liver were stitched together; then the slit in the rectus muscle was separately sewn and finally the integuments were sutured. The wound healed in 12 days without discharge and the skin sutures were then removed. Three days after the operation the patient was given one-sixteenth of a grain of perchloride of mercury and seven and a half grains of iodide of potassium in half an ounce of water three times a day. The only rise of temperature was to 100° F. on the second day and to 99·5° on the next day.

Remarks by Mr. RUSHTON PARKER.—Before going to the infirmary the patient had been seen a few times by Dr. Pethick of Woolton who told me that he thought the swelling was either a distended gall-bladder or an abscess of the liver, rather inclining to the former opinion, and he had sent the patient to the infirmary with the idea of having the diagnosis cleared up. Dr. Pethick had prescribed sodic benzoate and salicylate without appreciable benefit. No history of biliary colic had been elicited by Dr. Pethick or by us nor had any of us observed any signs of biliary obstruction. I had no more hesitation in removing a portion of this gumma than I had in leaving the remainder to be dealt with by anti-syphilitic drugs. No suspicion of syphilitic tumour having arisen it is impossible to say whether or not the drugs would have sufficed for relief, entire or partial, without operative interference. The removal of tension and of a substantial part of this large mass of broken-down infiltration under antiseptic conditions was attended by a cessation of symptoms which had previously disabled the patient, and healing occurred in the entire absence of adventitious wound complications. It is of course not usual to excise either partially or totally gummata which in the first instance are recognised as such, though it not unfrequently happens that tumours are removed for sufficiently good reasons which afterwards or even at the time are discovered to be gummata. Even after the administration of anti-syphilitic drugs gummata do not invariably disappear and in

[1] THE LANCET, Dec. 3rd, 1898, p. 1476.

critical situations such as here or in the brain it is agreed that too much valuable time should not be spent in the expectation of relief being obtained from drugs. When gummata have broken down, ulcerated through the skin, and become riddled with more or less septic sinuses they frequently heal under otherwise most unpromising conditions when once anti-syphilitic drugs are suitably administered. But it might have gone hard with the patient in the present case if that extensive gummatous area had suppurated after ulceration, perforation, and secondary infection of the interior. So it may be considered fortunate for him that the pain and other conditions led to an exploration which revealed the diagnosis in the absence of such complications. Though the extirpation was only partial it appeared at the moment of exposure to be very desirable as a help to recovery and in this it has apparently fully succeeded. The man was seen in November, 1898, when he was found to be free from all symptoms of disease and had a sound depressed scar at the seat of the operation.

Medical Societies.

CLINICAL SOCIETY OF LONDON.

Cases of Abdominal Section.—Rheumatic Tonsillitis.

A MEETING of this society was held on Jan. 27th, the President, Mr. LANGTON, being in the chair.

Mr. J. HUTCHINSON, jun., read notes of three cases in which he thought it necessary to perform Abdominal Section. In none of them was there any external wound. Case 1.—A man, aged 32 years, was run over and subsequently became collapsed. Slight abdominal distension and much tenderness were present with dulness beyond the left linea semilunaris which shifted with change of position. On the following day the temperature had risen to 102° F., and the abdominal distension had increased. On opening the abdomen he found it full of blood, but in spite of careful search he could find no vessel requiring ligature. Great relief followed the removal of the blood, but some oozing occurred subsequently, as evidenced by dulness in the flanks and the escape of blood into the dressings. He left the hospital a month later. Mr. Hutchinson raised the question whether the presence of effused blood within the peritoneal cavity was likely to prove injurious and he thought it was. Case 2.—A woman was brought to the hospital with symptoms pointing to intestinal obstruction. On opening the abdomen over two pints of clear, pale, yellow odourless fluid escaped. The intestines were slightly congested, the stomach was dilated, and the uterus was enlarged as at the third month of pregnancy. He was at a loss to discover the nature of the fluid and closed the wound. In spite of a passing improvement the patient aborted on the following day and died soon after. Post mortem the abdomen again contained a large quantity of the same serous fluid and the intestines showed signs of commencing peritonitis. Exactly in the middle line of the posterior surface of the bladder, one inch above the peritoneal reflexion, and therefore hidden from view, was a small round perforation one-seventh of an inch in diameter, through which urine could readily be expressed. The bladder and urethra were otherwise normal. If the nature of the fluid had even been suspected he thought it might have been possible to discover and repair the perforation. He surmised, under the circumstances, that the wound was caused by an unskilful attempt to procure abortion. From the history it seemed likely that urine had been leaking into the peritoneum for at least four days. He discussed the effects of effused urine in the peritoneal cavity and recalled that experiments on animals had shown that healthy urine might be injected into the abdomen without giving rise to much local reaction and that in moderate quantities it might be absorbed and the animal recover. Case 3.—A woman, aged 47 years, was admitted with the history that, previously in perfect health, while lifting a basket on the preceding day she had been seized with pain in the left side of the abdomen followed by vomiting and some collapse. A smooth, moveable tumour could be made out to the left of the middle line of about the size of a fœtal head. This was dull on percussion but there was no dulness in the flanks. Nothing of interest was made out by vaginal examination. On opening the abdomen a quantity of characteristic glairy fluid escaped and it was seen that the largest cyst of a multilocular ovarian tumour had ruptured. The fluid was sponged away but the cavity was not irrigated. Recovery followed. Admitting that the thin serous fluid of an ordinary ovarian cyst might if effused in the peritoneal cavity undergo absorption without giving rise to much trouble he asked whether this thick, glairy fluid would prove equally innocuous.—The PRESIDENT, commenting on the first case, observed that though blood in the peritoneal cavity need not give rise to septic mischief it would nevertheless be advisable to operate because one could not know the conditions which had given rise to the effusion and he related the case of a man who had received a bullet wound three inches below the nipple. As there was internal hæmorrhage he opened the abdomen and found that the liver had been extensively lacerated, but ultimately he managed to arrest the hæmorrhage and the patient recovered.—Mr. L. A. DUNN pointed out that the blood which had oozed after the operation although considerable in quantity did not seem to have done any harm. The President's case was not altogether parallel because the bullet wound was, or might be, septic.—Mr. HUTCHINSON, jun., insisted on the great relief which had followed the operation in respect of the pain, adding that he had purposely left the lower part of the wound loose so as to allow of the escape of any subsequent effusion of blood.—Dr. BATTY SHAW, in reference to the third case, related the case of a woman who was admitted to hospital three days after labour. After delivery it was noticed that there was something abnormal in the abdomen and she was sent into the hospital with the diagnosis of rupture of an ovarian cyst. She died on reaching the ward and post mortem they found a pale straw-coloured fluid in the abdomen without any sign of inflammation and a collapsed ovarian cyst. He remarked that there had been no noteworthy increase in the quantity of urine passed since the accident. The fluid was thin, but that he suggested might be due to dilution with fluid secreted by the peritoneum.—Mr. CHARTERS SYMONDS related the case of a girl, aged 14 years, in whom he had recognised the presence of an ovarian tumour, but when she was on the operating table no trace of the tumour could be found, though there was nothing in the recent history pointing to rupture. He opened the abdomen all the same and found the peritoneal cavity full of serous fluid together with a ruptured ovarian cyst. The patient recovered. He also related the case of a woman, aged 35 years, who came in with a history pointing to rupture of an ovarian cyst. Owing to special circumstances there was a delay of some days in operating and when this was decided upon she was in a serious condition. She died from shock, and though there was much fluid in the abdomen there were no signs of inflammation. He thought that if he had not operated this patient might have recovered.—The PRESIDENT thought that the extravasation of a thick viscid fluid with the things that it might contain might not improbably determine peritonitis. He related the case of a woman with an ovarian tumour in which spontaneous rupture followed by shock and ultimate recovery took place no less than four times. After the last rupture he opened the abdomen and removed the collapsed cyst. There had never been any peritonitis or any adhesions.—Mr. HUTCHINSON, jun., in reply, asked what was the cause of death in Dr. Shaw's case, as there was no peritonitis. He mentioned a case in which a woman ruptured an ovarian cyst from being thrown forward in a cab.

Dr. BERTRAM ABRAHAMS read a paper on Rheumatic Tonsillitis. The material upon which this paper was based was mainly composed of cases of rheumatic tonsillitis observed by Dr. Abrahams during the last three years. A large number of cases of chorea, rheumatism, and cardiac disease, both in adults and children, had been investigated and tabulated and the resulting statistics compared with those of previous observers in order to ascertain as accurately as possible the relation of the affection of the throat to the rheumatism. The bacteriology of many of the cases had also been studied with a view to obtaining some light upon the etiology of the disease itself. The bulk of the work in so far as it related to children was done in the out-patient department of the Evelina Hospital for Sick Children. Dr. George Carpenter was kind enough to permit the use of the material and also to allow the results to be compared with his own works for the last ten years. Details were given in the paper of a number of cases illustrating: (1) the occurrence of endocarditis after non-scarlatinal tonsillitis without the intervention of arthritis or chorea; (2) tonsillitis immediately followed by a first attack of chorea

(3) repeated attacks of chorea each preceded by tonsillitis; and (4) the occurrence of sore-throats at various points in the rheumatic series. Clinically, five varieties of rheumatic throat affection might be distinguished. 1. Faucial erythema, the pharyngeal inflammation described by Trousseau as ushering in an attack of acute rheumatism. 2. Follicular tonsillitis. 3. Quinsy. Between these latter no pathological distinction could at present be drawn, though it was notable that when a patient had repeated attacks they were almost always solely of one kind or the other, an alternation being rarely observed. As was also the case with non-rheumatic forms, the follicular variety was commoner in children, quinsy in adults. 4. The abortive form described by Singer, in which the joint and muscle pains were vague. 5. Chronic rheumatic tonsillitis, described by Dr. Max Thorner; this affection was more probably gouty in nature. A statistical inquiry was made into consecutive cases of three distinct affections—namely, 248 of chorea, 43 of acquired heart disease in children unassociated with chorea, and 66 of rheumatic fever in adults. Of the cases of chorea in which a reliable history was obtainable 53·4 per cent. had a family or personal one of sore-throat. This was not associated with any marked predisposition to either arthritis or heart disease. Of the cardiac cases 66·7 per cent. gave a history of throat affections. Among the adults 45·5 per cent. had a definite throat history, 21·2 per cent. had suffered from ulcerated throats within three weeks of the attack of acute rheumatism, and 47·2 per cent. showed faucial erythema within two days from its onset. In children, where the commencement was insidious, faucial erythema was extremely rare. On the other hand, a large proportion of them had follicular tonsillitis when first seen, several being brought up on this account and either revealing cardiac disease when examined or developing chorea while under observation There seemed little eason to doubt that in many of these cases the tonsils might have been the channel of infection. Bacteriological examination of the tonsils and their exudation in a large number of cases revealed the constant presence of streptococci and staphylococci, the former more frequently, but the latter oftener in pure culture. Similar organisms were found in the urine drawn from the bladder with all antiseptic precautions. Taking these results together with the discovery of the same microbes in the blood and affected joints in acute rheumatism by Sahli and others, the probability of the occurrence of infection through the tonsil became very strong. It was believed by many that the rheumatic patient was poisoned by the attenuated virus of a germ which when fully active leads to pyæmia. The following conclusions were put forward: 1. The more common varieties of rheumatic sore-throat fell into two main categories—faucial erythema and tonsillitis proper. 2. Faucial erythema was most common in adults, and rheumatic tonsillitis in children, in whom it usually assumed the follicular type, quinsy being more frequent in older subjects. 3. Faucial erythema was an initial manifestation of acute rheumatism and tonsillitis might be the actual primary lesion. 4. Many cases were now definitely on record in which endocarditis had followed a non-scarlatinal tonsillitis unaccompanied by joint pain. In numerous other instances the tonsillitis had immediately preceded an attack of arthritis or of chorea. 5. The presence of the same micro-organisms in the tonsils, joints, blood, and urine was evidence in favour of the participation of pyogenic cocci in the etiology of rheumatism.—Dr. KINGSTON FOWLER was glad to have Dr. Abrahams' confirmation of his own observations first published in 1880. He agreed that tonsillitis might be followed by rheumatism or chorea or endocarditis. He questioned the accuracy of the term "ulcerated sore-throat" since in ordinary tonsillitis no ulceration properly so-called was present. He recalled the case of a man who was admitted into hospital with quinsy for which he was being treated with chlorate of potash and iron. He remarked at the time that if he had seen this patient on his admission he would have felt disposed to give him anti-rheumatic remedies. Eight days after this while still in bed this patient had an attack of acute rheumatism. He urged that if the rheumatic nature of these throats were recognised in good time and anti-rheumatic remedies administered the attack of rheumatism might be averted. He also mentioned the case of a man who had a sore-throat just before going on his holidays. He went mountain-climbing, nevertheless, and was laid up in the high Alps with a severe attack of rheumatic fever. He deprecated the use of the term "growing pains," such pains being in reality rheumatic.—Dr. J. W. CARR asked whether the diagnosis of these supposed rheumatic throats was made from the history or from the subsequent occurrence of rheumatism. In one of Dr. Abrahams' cases the interval between the sore-throat and the rheumatism was a year and in another 17 years. He suggested that an ordinary tonsillitis might attack rheumatic as well as other subjects. He had not been able to convince himself that anti-rheumatic remedies modified the course of these cases of tonsillitis. He defended the use of the term "growing pains" which he thought were actually as described. He himself had suffered therefrom, yet he was not rheumatic.—Dr. LUCAS BENHAM thought that any kind of sore-throat might be followed by rheumatism, but the sore-throat always seemed to precede the rheumatism and even to be the cause of it. He related a case of a child who had ordinary tonsillitis lasting three days and just when he was getting well there was a rise of temperature and a mitral murmur developed. He pointed out that when there was great œdema of the tonsils a slough might form at the point of contact and be followed by an ulcer.—Dr. G. A. SUTHERLAND admitted that it was difficult to demonstrate the connexion between sore-throat and rheumatism, but some still asked whether erythema nodosum and chorea were rheumatic manifestations. He suggested that the tonsils might not be the only structures attacked and referred to cases in which there were headache, vomiting, and general malaise without any localising sign in association with well-marked tonsillitis in patients who subsequently developed rheumatism. He thought that the lymphoid tissue of the alimentary tract might share in the process and called attention to the occurrence of "rheumatic appendicitis."—Dr. TOOGOOD said that according to his experience most cases of follicular tonsillitis were of bacterial origin and were markedly infectious. The organisms which he had met with were streptococci and staphylococci and sometimes the short diphtheria bacillus.—Dr. ABRAHAMS, in reply, explained that "growing pains" and "ulcerated sore-throat" were merely colloquial expressions which one had to make use of in questioning patients. He was not satisfied that the anti-rheumatic treatment of these throats had any beneficial effect and he mentioned a case to show that the administration of the salicylates could not be relied upon to avert the subsequent occurrence of an attack of rheumatism. The non-success of anti-rheumatic treatment, he thought, was in favour of a bacterial origin. He concurred with Dr. Sutherland's remarks as to the gastro-intestinal disturbance in some of these cases. He pointed out that the germs referred to by Dr. Toogood were not invariably present and possibly an attenuated form was the true cause of rheumatism.

OPHTHALMOLOGICAL SOCIETY.

Rapid Changes in Refraction in connexion with Diabetes.—The Stereoscopic Examination of Skiagraphs of Foreign Bodies in the Eye and Orbit.—Exhibition of Specimens and Cases.

AN ordinary meeting of this society was held on Jan. 26th, Mr. H. R. SWANZY, President, being in the chair.

Mr. H. GRIMSDALE read a paper on Rapid Changes in Refraction in connexion with Diabetes. A female, aged about 45 years, was first seen on Oct. 7th, 1897. She had been always thin and delicate and had been losing flesh. She had been wearing for near vision—right, spherical + 1 D., cylinder + 0·75 D.; left, spherical + 1·75 D. She had suddenly noticed a change in the power of her sight a few days before her visit; distant objects became dim and near objects became clearer. When seen the vision of the eyes was $\frac{6}{9}$; with − 2 D. spherical and − 0·5 D. cylindrical for the right eye and − 2 D. spherical for the left eye the vision equalled $\frac{6}{6}$. The result was confirmed by the shadow test. In the right lens there were several opacities near the centre; the left lens was clear, but the nucleus in each was marked. No other defect in the eyes was found. The condition was regarded as early sclerosis of the lens and glasses for distance were ordered. Dr. Stokes had shortly before discovered a large amount of sugar in her urine (26 grains to the ounce). The urine had been frequently examined in previous years and had contained no sugar. After 10 days the vision had returned to its former condition, that of the right eye being $\frac{6}{9}$, with − 0·5 D. $\frac{6}{6}$, and of the

left eye $\frac{6}{9}$. The right lens showed irregular astigmatism, but the opacities were unaltered. About three weeks later the patient died from diabetic coma. The interest of the case lay in the development of myopia and its rapid disappearance. A similar case was reported by Risley[1] in which disappearance of sugar in diabetes was accompanied by development of hypermetropia followed by a return to normal when the sugar reappeared. The cause is probably a lenticular one; it was impossible to assume an alteration in position of the retina; it was not likely to be due to spasm of the ciliary muscle as this would have involved a permanent spasm in Risley's case suddenly giving way and then reappearing.

Mr. DOYNE quoted the case of a diabetic man, aged 43 years, whose vision and refraction were hypermetropic 3 D. $\frac{6}{9}$. After a voyage vision was $\frac{6}{12}$ + 2 D. $\frac{6}{6}$. The sugar then disappeared under treatment and vision was emmetropic or hypermetropic 0·5.

Mr. MACKENZIE DAVIDSON gave a demonstration of the most recent changes and developments he had made in his method of investigating the presence and position of foreign bodies in the orbit and eyeball. Two negatives were taken, the light being changed in position about six centimetres, the interocular distance. If these were examined side by side against a window with a little practice in converging the eyes a miniature stereoscopic picture started into vivid relief and a fairly accurate estimate could be made of the situation of the foreign body in relation to a known point such as a piece of lead wire attached to the lower eyelid. The best instrument for seeing stereoscopic skiagraphs was Wheatstone's reflecting stereoscope. If the stereographs were reversed the object still stood out in perfect relief, but it appeared to be in the other eye; this would not give rise to any confusion as it would always be known in which eye the foreign body was lying. Mr. Mackenzie Davidson had applied his method of localising foreign bodies in the eye in 70 cases and he claimed for it an indispensable position in ophthalmic practice.

Mr. SILCOCK spoke of a case in which a foreign body had passed through the cornea and lens and was located by Mr. Mackenzie Davidson about six millimetres from the optic disc. Under an anæsthetic an incision was made through the sclerotic and the magnet introduced close to the foreign body which was withdrawn.

Mr. ADAMS FROST, Mr. JOHNSON, Mr. TAYLOR, and Mr. CARGILL spoke of cases under their care.

The following card specimens were exhibited:—

Dr. J. HERN: Obstinate Conjunctivitis.

Mr. D. C. LLOYD OWEN: The Cartella Eye Shield.

Mr. W. H. JESSOP: Skiagraph of a Foreign Body in the Eye.

Mr. JOHN GRIFFITH: Microscopical Specimen of Primary Sarcoma of the Cornea.

Major M. T. YARR, R.A.M.C.: Patch of Central Choroido-retinitis simulating in appearance the Optic Disc.

Mr. C. HIGGENS: Case of Removal of the Lens for High Myopia.

Dr. E. C. FISCHER: Associated Movement of the Lid and Jaw.

Dr. A. BRONNER: (1) Congenital Tumour of the Cornea; degenerated nævoid growth?; and (2) Tuberculous Tumour of the Iris.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Specimen.—Resolution on the Vaccination Act.—Exhibition of Radiographs.—Removal of Tumours.—Some Points in the Surgery of the Paralyses of Children.

A MEETING of this society was held on Jan. 26th, Dr. R. S. ARCHER, Vice-President, being in the chair.

Mr. ANDREW STEWART showed a Leg amputated for Sarcoma behind the Knee.

Dr. PERMEWAN moved:—

That the members of the Liverpool Medical Institution are of opinion that the Vaccination Act, 1898, was enacted in direct opposition to the findings of the Royal Commission; that the operation of the Act will be prejudicial to the public safety and that its amendment is urgently required.

In introducing the motion Dr. Permewan said that he thought it the duty of every association of medical men to express themselves unmistakeably on the pernicious character of this Act. The principle of contracting out ought not to be applied to sanitary legislation; either vaccination should be absolutely voluntary or compulsion should be complete and efficient. It was most illogical to prosecute and convict of manslaughter parents who omitted to provide medical attendance for their children during illness because they conscientiously believed such attendance to be useless and at the same time allow them on what were called conscientious grounds to neglect to provide for their children what the Royal Commission had found to be a protection against a specific loathsome disease. The results of the Act had been most lamentable.—The resolution was carried *nem. con.*

Mr. C. THURSTAN HOLLAND showed Radiographs of the Normal Chest of a boy and also of the Chest of a boy in whom the left apex was in a state of tuberculous consolidation. The difference was most marked, as also was the difference between the two sides in the affected child; this difference could also be plainly seen with the fluorescent screen. The exposure with a coil giving a 10 in. spark was 60 seconds; the boy was six and a half years of age.

Mr. BANKS described three cases of Removal of Tumours lying External to and Behind the Tonsil. The first case was that of a young man in whom the tumour had been growing for many years. It was removed by the mouth, a vertical incision being made over it, and was easily shelled out without hæmorrhage; it was found to be an adeno-fibroma, as had been diagnosed. The second was a precisely similar case in a woman, aged 40 years, with a history of two years' growth of the tumour. As she was very stout and full-blooded a preliminary laryngotomy was done and the pharynx was packed with sponge, but the bleeding was only trifling, and the tumour was easily shelled out with the finger. In the third case the patient was a woman about 20 years of age. A preliminary laryngotomy was done and the pharynx was plugged, then a free incision was made over the tumour and enucleation effected. The tumour was found to be adherent to bone and proved to be sarcomatous.

Dr. PERMEWAN described two cases of Tumours of the Œsophagus which he had removed by sub-hyoid pharyngotomy. The first patient, in whom the growth was benign, died from the immediate effects of the operation; the second recovered.—Mr. NEWBOLT, Mr. BANKS, and Mr. LARKIN spoke.

Mr. ROBERT JONES, in a paper on Some Points in the Surgery of the Paralyses of Children, deplored the lack of interest displayed by the profession in the treatment of these affections. Their pathology required working up and further experiments ought to be made. These should consist of inoculations at an early stage and of a search for the microbe. In view of recent experiments of his own, of outbreaks of an epidemic character at Stockholm, in America, and in Australia, there was strong evidence of the influence of infection. With care most of the deformities from poliomyelitis might be avoided, more especially those due to contractures. Mr. Jones discussed the question of tendon grafting and the conditions suitable to it. He thought the operation likely to prove very valuable in a number of cases. He had operated upon seven cases. In two he had inserted the sartorius into the tendon of the paralysed quadriceps. In two cases he had inserted the peronei into the paralysed tendo Achillis for talipes calcaneus. In one case he reinforced the tibialis anticus by means of the peroneus longus. Mr. Jones had operated upon over 60 cases of flail joints in accordance with the rules which he laid down in 1894. Suppuration only occurred in one case.—Mr. MURRAY, Dr. WARRINGTON, and Dr. BARR took part in the discussion of the paper.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 20th, Dr. Franklin Parsons, President, being in the chair.—Dr. Bruce Low read a paper on Epidemic Cerebro-spinal Meningitis, a disease in which, from its supposed infrequency in this country, little interest had been taken, and excepting the paper by Mr. B. Corney on an outbreak in Fiji 10 years ago it had been ignored by the society since 1865–67, when Professor Hirsch of Berlin and Professor Mapother of Dublin brought it before their notice. Four forms were generally recognised—the typical, the purpurous, the fulminant, and the abortive or chronic; the diagnosis of the last two was by no means easy, the definitions given in books applied to the first only,

[1] Transactions of the American Ophthalmological Society, 1897.

and many cases were mistaken for tuberculosis, typhoid fever, tetanus, influenza, sunstroke, and other diseases. Though its specific character was not recognised until the beginning of the present century he believed that it was not new to this country and that it had been the cause of much of the mortality previously ascribed to gaol fever and "malignant *fever with purples*." Few diseases, indeed, had been so variously designated, but at present the name of "cerebro-spinal fever" was the most approved, though the American and German vernaculars of "stiffneck fever" and "Genicksbarre" were very expressive. Cerebro-spinal meningitis, however, was a not infrequent complication of many febrile diseases and of those of the cranial bones and middle ear; this form was etiologically wholly different and never epidemic or communicable, or attended by purpura or the herpetic eruptions characteristic of cerebro-spinal fever, which was also marked by the absence of any associated disease. The epidemic fever had appeared from time to time in France, Switzerland, and America during the first half of this century, spreading later to Denmark, Italy (where in 1894 it caused 2000 deaths in a population of 30 millions), and since 1860 to Germany and the East and South-east of Europe. In 1865 there was a severe epidemic in Polish Prussia, 1900 persons being attacked and 1000 dying in the province of Dantzic alone. In the United States of America it was even more prevalent, especially in New York and other great cities, where in 1881 the deaths were equal to 0·34 per 1000 of the population. Having followed his history of the chief epidemics in Europe and America by a more detailed account of the various outbreaks in the British Islands down to the past year, he said that many deaths ascribed to influenza and other causes were probably due to this disease, and the occasional alleged instances of recovery from tuberculous meningitis, as well as the similarity in the curves of the yearly mortality from the several diseases in question, were suggestive of such confusion of diagnosis. Overcrowding, to which might be referred its greater incidence in barracks, asylums, &c., and cold and wet, whether directly or as leading to neglect of ventilation, seemed to be predisposing causes, but its infectivity was now generally admitted. Gaucher, Ughetti, Marchiafava, Celli, and Leichtenstern had between 1881 and 1886 observed micrococci in the cerebro-spinal fluid of epidemic and other forms of meningitis, but they were all supposed to be identical with the pneumococcus of Fraenkel. Though Weichselbaum had in 1887 described a peculiar form of micrococcus, to which he gave the name of "diplocccus intracellularis," in six cases of the epidemic disease, it was not until 1895 that Jaeger of Stuttgart proved that this which he called "tetracoccus" was itself characteristic and causative of the epidemic cerebro-spinal fever, distinguishing it from the other forms of meningitis. His conclusions had since been fully confirmed by numerous observers in Germany, Austria, and America, and by Dr. Still in this country, who had by its means identified the so-called "infantile paralysis" with the disease under consideration. The tetracoccus was so constantly present in the nasal mucus of persons suffering from cerebro-spinal fever that Jaeger, Heubner, and others believed that the infection was always communicated through the nasal discharges, the profuseness of which in some epidemics, as that in Styria in 1898, had led to its being taken for influenza. Animals, too, were susceptible to cerebro-spinal fever, the epidemics of "influenza" among horses being doubtless due to this disease, as that in New York when 1412 died in the six weeks ending Dec. 2nd, 1872, many of them as reported at the time with meningitis and purpura which were looked on as complications, though 782 persons had died during the same autumn from cerebro-spinal fever. During the Irish epidemics of 1846 and of 1866–67 many pigs died from "the purples." Uspenski in 1896 reported a case in a dog and suggested that it was one of the diseases vulgarly comprised under the designation of "distemper." How far the disease might be spread by the intervention of domestic animals and how long or under what conditions the tetracoccus could maintain an extracorporeal existence were problems which with our recently acquired knowledge of the specific microbe distinguishing it from non-specific or pneumococcal meningitis we should ere long be in a position to decide.—Professor Notter said that the cases he had seen in India were exclusively among the men in crowded barracks, the officers, non-commissioned officers, and married men having been exempt.—Mr. H. Stott stated that in America the herpetic eruption was looked on as diagnostic of the specific disease.—Dr. Washbourn disapproved of the term "epidemic" since the specific disease was frequently sporadic especially among children. Influenza rendered the individual specially susceptible to pneumococcal infection which might set up a meningitis, but the nature of each case could be easily determined by the examination of the fluid obtained by aspiration in the lumbar region, which would show either tetracocci or pneumococci.—Dr. Still had found the tetracoccus in all the cases he had examined of the post-basillar meningitis of infants which he therefore believed to be identical with sporadic specific cerebro-spinal meningitis. In these the retraction of the head was very constant, optic neuritis was rare, but amaurosis was frequent, and he had seen the eruption though on two occasions only; the duration of this form was also longer but the seasonal incidence was the same, viz., in autumn and spring.—Dr. Bruce Low, in reply to a question, said that lumbar puncture if performed below the end of the cord was devoid of danger, easy, and almost painless, and in our present state of knowledge really indispensable to the correct diagnosis of all but typical cases. The cases associated with rheumatism, joint affections, parotitis, otitis, &c., were pneumococcal.

SOCIETY OF ANÆSTHETISTS.—An ordinary meeting of this society was held on Jan. 20th, Dr. Dudley Buxton, President, being in the chair.—Mr. Henry Davis, in reopening the discussion on the Choice of an Anæsthetic, said that the safety of the patient must be their first aim. He preferred to commence the administration with gas and ether, thus steadying the patient and enabling him to withstand the shock of the operation better. Subsequently he changed the anæsthetic if he deemed it desirable. In operations upon the upper air passages he employed gas and ether; when the operation was prolonged he continued with chloroform even though the patient was in the sitting posture. He regarded the position of the head as of importance and described the posture which he preferred in various operations. For abdominal operations gas and ether sufficed, but chloroform was often requisite to produce the necessary muscular relaxation. In "alcoholics," although gas and ether often answered, in some cases chloroform was required. In heart disease if serous effusions existed ether was practically contra-indicated. The same applied in diseases of the kidneys.—Mr. Warrington Haward did not agree with much of what had fallen from Mr. Owen about ether. Personally he believed that the anæsthetic when properly given was as suitable for children as for adults. Statistics certainly showed that it was the safer anæsthetic. Mr. Barker had said that the anæsthetic might be regarded from two points of view, that of the anæsthetist and that of the surgeon, but Mr. Haward thought the most important point of view was that of the patient, and he believed that this was invariably "safety." "Above all other things let it be a safe one." No adequate proof had been advanced which shook his belief that ether was in every sense the safer anæsthetic. As to its being less agreeable that was, even if true, which he doubted, a minor consideration. In abdominal surgery ether had always fulfilled his requirements, complete muscular relaxation being obtained. In operations on the throat the use of ether did not, he contended, increase hæmorrhage; although he had given ether successfully in staphylorrhaphy he admitted that chloroform was more convenient as was the case in operations on the larynx and upper air-passages. Cocaine he considered most dangerous for children. Possibly in cases of abdominal distension and intestinal obstruction with vomiting local anæsthesia by cocaine might be useful.—Sir Felix Semon contended that in chronic stenosis of the upper air-passages chloroform was the best anæsthetic, as ether increased the dyspnœa and the liability to subsequent pulmonary complications. He narrated a case in which he performed laryngectomy, the patient being anæsthetised with ether by the rectum. The patient died within 24 hours, mainly, he thought, from the severe complications set up by the ether. In operations on adenoid vegetations he contended that chloroform if skilfully given was the best anæsthetic, since it allowed the careful and not hurried performance of the operation. It was to be regretted that many persons undertook such cases without sufficient experience or manipulative skill, and this fact he submitted accounted for very many of the fatalities which had occurred when this operation was in progress.—Dr. G. H. Savage had found the insane take various kinds of anæsthetics with equal

safety. Chloroform appeared to produce most after effects, causing in some instances mania, &c. As a curative agent in cases of violent mania chloroform was in Dr. Savage's opinion probably most useful. Certainly the insane, as a rule, took anæsthetics well.—Dr. Macnaughton Jones thought that in 90 per cent. of the cases requiring an anæsthetic ether was best on the grounds of its safety and celerity of action. Chloroform was unfortunately given by anybody and everybody. Every practitioner considered himself able to give it and the use of lint favoured this fatal error. He pointed out that collapse was often the result of the operation although attributed to the anæsthetic. Dangers occurring under ether were easily recognised and remedied; those following the use of chloroform were too often irremediable, but many of these were seen by the skilled and experienced anæsthetist and by his prompt action counteracted. Hence the importance of experienced anæsthetists whose knowledge enabled them to make a wise choice of the anæsthetic and to give it in the best manner. In organic lung disease and diabetes and in ophthalmic surgery he preferred ether, except in glaucoma. In gynæcological operations and abdominal surgery he preferred gas and ether. In cases of hysteria chloroform was his personal predilection. In every case, however, he felt strongly that the surgeon should after the facts of the case were placed before the anæsthetist leave him to make the selection of the anæsthetic.—Mr. Stanley Boyd was in agreement with Mr. Haward's remarks. He spoke of the dangers of chloroform in the hands of inexperienced house surgeons and believed that ether was a safe anæsthetic for children. He advocated morphia as a preliminary to anæsthesia and the lateral position for operations about the naso-pharynx and mouth. The restlessness of patients under ether during abdominal operations was often, he thought, the result of hurried anæsthesia and could be obviated with care.—Mr. Eastes preferred ether. In cases of shock, paralysis of the intercostals or diaphragm, and degeneration of the heart, in low blood tension, or cases in which the patient was sitting up, chloroform should not be given nor as a rule in cases of abdominal or pelvic surgery. For adenoid operations he gave ether but not gas, as the latter, he held, caused congestion. Diabetics took ether and chloroform well. Mr. Eastes had found the A.C.E. mixture useful and safe and he felt that the attack upon it was too severe. Cocaine he had found to be very dangerous, especially for children, causing faintness.—Mr. Carter Braine liked the A.C.E. mixture for children under six years of age; after that age he gave ether. He now gave the A.C.E. mixture in cases of abdominal distension and advocated preliminary lavage. In thyroidectomy he preferred a preliminary injection of morphia followed by chloroform.—After some remarks from Mr. Harold Low, Mrs. Dickinson Berry, Mr. Tyrrell, and the President, Mr. White replied.

NORTH OF ENGLAND GYNÆCOLOGICAL SOCIETY.

A meeting of this society was held on Jan. 20th, the President, Dr. Donald, being in the chair.—Dr. Nathan Raw showed a Ruptured Uterus with an Ovarian Tumour removed by abdominal section after delivery of the child. The patient, a multipara, had been in labour for three days. She was then seized with sudden pain in the abdomen and hæmorrhage, with great collapse. On examination the vaginal vault was found to be pushed down by a large swelling above resembling an ovarian cyst. The os was high up under the pubes. The umbilical cord presented and the placenta was attached to the lower uterine segment. It was rapidly separated and a foot was brought down. Intestine was then discovered in the cavity of the uterus showing that rupture had occurred. The child was rapidly extracted with forceps to the aftercoming head, and a large rupture was then detected. Saline fluid was injected and the abdomen was opened. The abdominal cavity contained a large quantity of blood-clot and the contents of the ovarian cyst which had undergone torsion and ruptured. The uterus was rapidly amputated and removed together with the cyst. The patient rallied well but gradually sank and died three days after the operation.—The President made some remarks on the case.—Dr. T. Arthur Helme read the notes of a case of Degenerating Fibroid removed together with the uterus by abdominal hysterectomy. The patient, who was 29 years of age, had suffered from severe pain and hæmorrhage for eight months and on one occasion had retention of urine. The administration of ergot caused very acute pain the result of uterine contractions and had to be discontinued. As the hæmorrhage was causing uterine anæmia operation was decided upon. The uterus filled the entire pelvis. Total abdominal hysterectomy was performed, the vaginal roof being entirely covered over by peritoneum. No drainage was used. The patient made a rapid and uneventful recovery.—Remarks were made by Dr. Davies, Dr. Walter, Dr. Lloyd Roberts, and Dr. Briggs.—Dr. W. E. Fothergill read a paper on Some Auto-intoxications of Pregnancy and the Puerperium. He said that there was a large amount of evidence in favour of the conclusion that eclampsia was the result of a general auto-intoxication. The urine though small in quantity was low in toxicity, whilst the blood serum was two or three times more poisonous than the serum of health. Necrotic and hæmorrhagic lesions were constantly found in the liver in these cases and it was probable that this organ was chiefly at fault. Jaundice was frequently found associated with eclampsia and in acute yellow atrophy the liver changes were an exaggerated form of the hepatic lesions found in eclampsia. The various disorders of the nervous system, such as peripheral neuritis, poliomyelitis, &c., which occurred in pregnancy were clearly toxic in origin and it was likely also that melancholia and mania of pregnancy were also intoxications. It was probable that the extra strain thrown upon the various organs of excretion during pregnancy might lead to a loss of equilibrium between the poison production and poison excretion in the body. Although the subject was not yet fully worked out the "auto-intoxication" theory formed a good working hypothesis, and might afford a new system of classification of the various troubles of pregnancy, a large number of which might in the future be classified under the term "hepatic toxæmia" as suggested by Pinard.—Dr. Gemmell (Liverpool) said that in the puerperium many cases classed as septicæmia were unassociated with the presence of pyogenic organisms in the discharges or the blood and he considered them as toxæmic cases arising from absorption either from the kidneys, liver, or alimentary canal.—Remarks were also made by Mr. Wright and Dr. Walter.—The following office-bearers were elected for the year 1899:—President: Dr. Donald. Vice-Presidents: Mr. J. Benson, Dr. J. Braithwaite, Mr. J. N. Cregeen, Dr. W. E. Fothergill, Dr. J. E. Gemmell, Mr. C. Richardson, Dr. W. J. Sinclair, and Mr. G. E. K. Thorpe. Honorary General Secretaries: Dr. Arnold and Dr. W. W. Lea. Honorary Treasurer: Mr. Richard Favell. Council: Dr. R. A. Brannigan, Dr. E. Buxton, Dr. C. N. Gwynne, Mr. D. L. Hamilton, Dr. T. A. Helme, Dr. J. B. Hellier, Dr. J. D. Leigh, Dr. J. Matthews, Mr. E. H. Monks, Dr. S. Nesfield, Mr. M. Smith, Dr. D. Lloyd Roberts, Dr. J. E. Scowcroft, Dr. J. P. Stallard, Dr. J. D. Martin, Dr. D. Smart, Mr. C. Vereker, Dr. W. Walter, Dr. R. E. Williamson, and Dr. A. E. Wear. Honorary Local Secretaries: Dr. J. Scott (Manchester), Mr. W. Fingland (Liverpool), Mr. E. O. Croft (Leeds), and Dr. H. Rhodes (Sheffield).

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

A meeting of this society was held on Jan. 18th, Dr. Cattle, Vice-President, being in the chair.—Dr. Michie read a paper on Suppuration in the Neighbourhood of the Pregnant Uterus and gave details of seven cases which had come under his own notice. These cases fell into three groups: (*a*) In the first was a case of perityphlitic abscess due to perforation of the appendix vermiformis by a concretion in the fifth month of pregnancy. Dr. Michie performed an operation for the removal of the appendix and drainage of the abscess cavity which extended into Douglas's pouch where the concretion was found. The patient made a good recovery. (*b*) This group consisted of four cases of pyosalpinx in each of which the appendages were removed, in one during the fifth month of gestation, the patient afterwards going on to term, delivery and convalescence being in every way normal. In another case the appendages were removed during the fourth month. The patient was, however, suffering from severe septic poisoning due to a large quantity of putrid pus in the peritoneal cavity and extensive peritonitis. Miscarriage took place 24 hours after operation and she died on the fourth day. On two others where there was also a large quantity of sero-purulent fluid in the abdomen the operation was performed almost immediately after delivery at the fourth month and at term respectively; in both instances recovery took place. (*c*) The third group consisted of two cases of suppurating ovarian cysts complicating pregnancy which Dr. Michie had met with. In one ovariotomy was performed during the progress of labour at the sixth month.

Delivery was completed four hours after the operation and though the patient's condition was extremely critical for some days she ultimately made a complete recovery. In the last case a suppurating cyst was removed during the fifth month of pregnancy, the patient making an easy recovery and being delivered of a healthy child at term. In the light of these cases Dr. Michie drew attention to the necessity of inquiring into the previous history of patients suffering from "puerperal fever," as they showed that not in every instance was that disease due to infection conveyed from without at the time of or shortly after delivery, but that occasionally septic mischief may be in existence some time before labour takes place and be greatly aggravated and become extremely serious by the mechanical effects of that process.—The paper was discussed by Dr. Cattle, Mr. Chicken, Mr. Hogarth, and Mr. Woods.—Mr. Lander read notes of a case of Pseudo-hypertrophic Muscular Paralysis, a complete history of the patient being given from birth to death which occurred at 16½ years. Photographs were shown illustrating various stages of the disease. The latest photographs were especially interesting as they showed well-marked hypertrophy of the temporal muscles.—Dr. E. C. Kingdon showed a patient who had a small Congenital Tumour visible beneath the Conjunctiva at the lower and outer part of the left orbit and projecting prominently when the lower lid was everted. Dr. Kingdon considered it was a dermoid.—Mr. Laws suggested fatty tumour as an alternative diagnosis.—Mr. Chicken showed the following specimens: 1. Fibroid Tumour of the Uterus. Abdominal hysterectomy had been performed. 2. Tubal Abortion. 3. Hydrosalpinx.—Dr. Michie showed a specimen of Malignant Disease removed from the Transverse Colon by Enterectomy. Union was effected by suturing only. The operation had only been done four days before the meeting but complete relief of all symptoms had been secured and there was every prospect of a good recovery. The growth was an ordinary columnar carcinoma.

KIDDERMINSTER MEDICAL SOCIETY.—A meeting of this society was held on Jan. 27th, Mr. E. H. Addenbrooke, President, being in the chair.—Mr. J. Lionel Stretton showed: 1. A girl, aged 20 years, upon whom he had performed Excision of the Elbow-joint three years previously. She was now able to perform the duties of a domestic servant. She could carry a bucket of water and all her movements were perfect. 2. A Cystic Tumour weighing 3 lb. 12 oz. removed from the scalp of a man, aged 69 years. Four years previously a large sebaceous tumour was removed from the same situation. 3. A man, aged 63 years, upon whom he had operated for Recurrent Epithelioma of the Lip. In order to fill up the large gap a triangular flap of skin was dissected from the neck, turned up, and fixed between the two portions of lip with a satisfactory result.—Mr. W. Hodgson Moore showed a Melanotic Sarcoma removed from the cheek of a woman, aged 69 years. The growth supervened on a mole and she refused to have it removed until it had extended so much that considerable deformity followed the operation. Mr. Moore advocated the removal of all moles as he considered them so liable to malignant changes.—Mr. Oliphant showed: 1. The Brain of a woman, aged 50 years, who died in the hospital. There was a spindle-celled sarcoma of about the size of a turkey's egg growing from the meninges over the fissure of Sylvius on the left side and compressing the frontal and temporal lobes. The points of interest about the case were: a very indefinite history and the fact that her symptoms materially improved under iodide of potassium, her pulse was never rapid, her temperature was never subnormal, there was no vomiting or convulsion, and her mental condition remained clear to within a few hours of death. 2. Skiagraph of a Fracture of the Right Tibia in a young man, aged 21 years. He slipped at football and when admitted to the hospital there was so much swelling that an accurate diagnosis could not be made. The skiagraph showed a transverse fracture through the thickest part of the lower end of the tibia and a second through the internal malleolus which was displaced downwards to an extreme degree.—Dr. B. Addenbrooke showed specimens of Tubercle Bacilli in Milk.—Mr. J. Lionel Stretton read a paper on the Treatment of Tuberculous Disease. After an interesting discussion the following resolution was adopted: "That the attention of the local authorities be drawn to the importance of safeguarding the public from the spread of tuberculous disease."

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 17th, the Vice-President, Dr. Horrocks, being in the chair.—Dr. Rabagliati showed a Fibro-myoma of the Uterus weighing 11½ lb. which had been successfully removed. The case was complicated by the presence of a malignant tumour in the left breast.—Dr. Kerr read notes on two cases of Lateral Sinus Pyæmia.—Dr. Althorp read notes on a case of Lympho-sarcoma involving the Stomach, Colon, and Rectum. The patient was an unmarried woman, aged 29 years. The first symptoms of illness were in June, 1898, and consisted of diarrhœa and vomiting with fever. The fever persisted but the other symptoms subsided with rest in bed. On Sept. 10th she was admitted to hospital with symptoms of chronic intestinal obstruction and on examination a growth of the rectum was found. It infiltrated the surrounding tissues and almost blocked the lumen of the gut, not allowing passage of the finger past the obstruction. Left inguinal colotomy was performed on Sept. 21st; the fingers were introduced into the abdominal cavity and the pelvic contents were felt to be matted together. The patient progressed satisfactorily and the bowel was opened on the fifth day. For about six weeks she was able to be up and about the ward, but at the end of that time she began to complain of abdominal pain until her death on Nov. 16th. There had been free discharge of fæces all this time. A fortnight before death a swelling was noticed in the position of the transverse colon and during the last week of life she vomited freely. At the necropsy there was found a growth involving: (1) the stomach in its pyloric half, the small curvature and spreading up to the œsophagus; (2) the cæcum, ascending and transverse colon; and (3) the rectum, matting together the pelvic contents. There was only one secondary growth which was found in the bronchial glands.—Dr. Eurich gave a description of the Microscopic Appearances of the Growth, pronouncing it to be a Lympho-sarcoma. He discussed the nature of lympho-sarcomata and suggested a parasitic origin in the case under consideration, although there was no direct evidence in the shape of organisms.—Dr. Horrocks, Dr. Goyder, Dr. Hall, and Dr. Metcalfe discussed the case.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held on Jan 26th at 20, Hanover-square, W., the President, Dr. Fortescue Fox, being in the chair.—21 candidates were nominated for election.—Dr. Evelyn Crook read a paper on the Climate of Margate in Relation to Disease. He showed that the atmosphere of Margate was at all times free from the raw penetrating land fogs so prevalent in many places, and the various diseases for which a residence at Margate was particularly suitable were considered, stress being laid on the great benefit derived by patients suffering from tuberculous disease and phthisis in its early stages from a residence at Margate.—Dr. Brodie Cruickshank read a paper entitled Notes on Nairn, chiefly Climatic. Nairn, situated on the southern shore of the Moray Firth, had one of the smallest rainfalls in the United Kingdom, the average annual rainfall being 24·52 inches. The mean annual temperature for the last 10 years was 46·1° F. From June to February the prevalent winds were southerly and westerly; during March, April, May, and half June, winds from the north and east prevailed. The sea-bathing and drinking-water were good. Nairn was suitable for phthisical and tuberculous patients and had a great claim for consideration as a winter resort. Very little snow fell and mist and fog were almost unknown.—Dr. Solly, Dr. Bezly Thorne, Dr. Leon, the President, Dr. Septimus Sunderland, and Mr. MacHardy discussed the papers.—Dr. Evelyn Crook, in reply, said he believed that enlarged lymphatic glands were less liable to suppurate at Margate than in inland localities.—Dr. William Bain read a paper on the Action of certain Mineral Waters on the Biurate of Soda.—Dr. A. P. Luff said that the experiments conducted by Dr. Bain were interesting, but in his opinion it would have been better to have treated the solubility of sodium biurate in blood serum or artificial blood serum mixed with such proportions of the constituents of the waters as might reasonably be expected to be introduced into the circulation when the waters were taken.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—An ordinary meeting of this society was held at 20, Hanover-square, W., on Jan. 25th, the President, Dr. H. Radcliffe Crocker, being in the chair.—The

President read a paper on Recurrent Desquamative Scarlatiniform Erythema.—The following cases were shown:—The President: (1) A male patient with Lichen Planus; and (2) a male patient with a patch on the anterior surface of the wrist of Tinea Circinata. Fungus and mycelium from the case were shown under the microscope and also a drawing was exhibited.—The President also exhibited other interesting drawings.—Dr. Stowers: An infant with Lichen Planus and a patch of Lichen Verrucosus on the Right Index Finger.—Dr. P. S. Abraham: (1) A male, aged 50 years, with Dermatitis Herpetiformis; (2) a female, aged about 30 years, with Dermatitis Herpetiformis; and (3) Atrophodermia Guttata in a female about 30 years of age.—Dr. Russell Ryan: A case of Lichen Planus.—Dr. T. D. Savill: Two children, aged 10 and six years respectively, with (?) Psoriasis Guttata and (?) Lichen Scrofulosorum.—Dr. Savill also showed a girl, aged 19 years, with a Symmetrical Maculated Purpuric Rash on the Thighs, Legs, and Arms.—The President, Dr. Abraham, Dr. A. Eddowes, Dr. Stowers, Dr. Savill, Mr. Pernet, and others took part in the discussions.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 25th, Mr. Alex. Miller, President, being in the chair.—Dr. Edgar showed two Ovarian Dermoids removed from a patient by abdominal section.—Dr. John Lindsay read a paper on a case of Defective Development of the Limbs. Several drawings were shown.—Dr. Robert Jardine read a paper on Saline Injections in cases of Hæmorrhage and Eclampsia. Two examples of accidental hæmorrhage and three of post-partum hæmorrhage were described. In all bleeding was very profuse and the shock was extreme. All the patients recovered. Five cases of eclampsia were described. The first patient was practically moribund when seen by Dr. Jardine, and she died, although the saline injection seemed to improve her pulse for some little time. Cases 2 and 3 were very severe examples of the disease. They both recovered. The saline injection had a most marked effect in increasing the quantity of urine excreted. Dr. Jardine considered that the saline injection should only be used in conjunction with some drug to control the fits, such as chloroform, chloral and bromide, veratrum viride, and morphia. Morphia in large doses he was inclined to think was the best. The solution used in the cases of hæmorrhage was one containing a teaspoonful of common salt to the pint of boiled water to which was added in the cases of eclampsia a teaspoonful of bicarbonate of potash.

Reviews and Notices of Books.

Dictionary of National Biography. Edited by SIDNEY LEE. Vol. LIV., Stanhope—Stovin. Pp. 446. Vol. LV., Stow—Taylor. Pp. 486. London: Smith, Elder, and Co. 1898.

THE men of letters whose names appear in these two volumes include Robert Louis Stevenson, Dean Swift, and Laurence Sterne. Stevenson was born in Edinburgh in 1850. His father, two uncles, and grandfather, all of whom were engineers in that city, are also the subjects of notice in the Dictionary. Much of Stevenson's work appeared in various periodicals, but a collected edition in twenty-seven volumes was commenced in 1894 and finished in 1898. His first popular success was "Treasure Island," published in 1883, followed in 1886 by "The Strange Case of Dr. Jekyll and Mr. Hyde" and "Kidnapped," both of which greatly increased his reputation. Stevenson was an invalid from childhood; for the sake of his health he settled in 1890 near Apia in the Samoa Islands and died there in 1894. Laurence Sterne was the son of an ensign in the army and was born in 1713. Having taken holy orders, a vocation for which he had no fitness, he held various preferments in Yorkshire and died while on a visit to London in 1768, a month after the publication of "A Sentimental Journey." Dean Swift was born in Dublin in 1667 and died in that city in 1745. The notice of him is by Mr. Leslie Stephen and extends to 24 pages.

The biographies of medical men in the two volumes are 36 in number, including 1 President of the Royal College of Surgeons of England and 2 Presidents of the Royal College of Physicians of Ireland. Edward Stanley, born in London in 1793, was apprenticed to two successive surgeons at St. Bartholomew's Hospital, was admitted a Member of the Royal College of Surgeons of England in 1814, and gained the Jacksonian Prize in 1815. He was elected assistant surgeon to St. Bartholomew's Hospital in 1816, lectured on anatomy from 1826 to 1848, and was elected full surgeon in 1838—a post which he resigned in 1861. He was elected a Fellow of the Royal Society in 1830 and was President of the Royal Medical and Chirurgical Society in 1843. At the Royal College of Surgeons of England he held in succession the most important offices. He was elected a life member of the council in 1832, Arris and Gale Professor of Human Anatomy and Physiology in 1835, Hunterian Orator in 1839, and President in 1848 and again in 1857. He was appointed Surgeon-Extraordinary to the Queen in 1858. Stanley died in 1862. His principal published works were "Illustrations of the Effects of Disease and Injury of the Bones" and "A Treatise on Diseases of the Bones." Richard Steevens was born in Ireland in 1653, studied medicine at Trinity College, Dublin, graduated there as M.D. in 1687, and thenceforward practised as a physician in Dublin, where he amassed a large fortune. He was a Fellow of the Irish College of Physicians and in 1710 was elected President of that body. He died the same year and the bulk of his property was bequeathed to found a hospital in Dublin, which hospital, since known as Steevens's Hospital, was completed in 1733 at a cost of £16,000 and was the first public hospital established in Dublin. Dean Swift was one of its earliest governors. John Sterne, or Stearne, grandson of a Bishop of Meath, was born in Ireland in 1624, fled to England on the outbreak of the Irish rebellion, and in 1643 proceeded to Cambridge, where he studied medicine at Sidney-Sussex College. Returning to Ireland in 1651 he received the degree of M.D. from Trinity College, Dublin, in 1658 and practised as a physician. In 1660 he proposed to the University that a college or hall affiliated to the University, of which he had been constituted President in 1654, should be set apart for ever as a college of physicians. The arrangement was sanctioned and Stearne, on the nomination of the Provost and Senior Fellows of Trinity College, in whom the appointment was vested, became its first President. He died in Dublin in 1669. John Sutherland, born in Edinburgh in 1808, became a Licentiate of the Royal College of Surgeons of Edinburgh in 1827 and graduated as M.D. at the University in 1831. After spending much time on the continent he practised for a short period in Liverpool where he edited "The Liverpool Health of Towns' Advocate," and in 1848 entered the public service as an inspector under the first Board of Health. In 1855, at the request of Lord Palmerston and Lord Panmure, he became the head of the commission sent to the Crimea to inquire into the sanitary condition of the English soldiers. He took an active part in the preparation of the Report of the Royal Commission on the Health of the Army, dated 1858, and also of the Report on the State of the Army in India, dated 1863. Both reports were of the greatest importance to the welfare of the soldiers and most of Sutherland's recommendations were carried out. He retired in 1888 and died at Norwood in 1891. Alexander Patrick Stewart, born in East Lothian in 1813, studied medicine at Glasgow University, graduated as M.D. in 1838, settled in Grosvenor-street, London, in 1839, and there practised till his death. In 1850 he was elected assistant physician to the Middlesex Hospital and became physician in 1855, in which year he

was elected a Fellow of the Royal College of Physicians of London. He was the author of several papers on medical subjects, but his title to recollection rests upon "Some Considerations on the Nature and Pathology of Typhus and Typhoid Fever applied to the Solution of the Question of the Identity or Non-identity of the two Diseases," read before the Parisian Medical Society on April 16th and 23rd, 1840. This paper was reprinted by the New Sydenham Society in 1884. The observations on which it is based were made at the Glasgow Fever Hospital. In this essay Stewart states clearly, from his own observations, the differences between the two fevers in origin, cause, course, symptoms, and anatomical lesions. Sir William Jenner's papers in 1849, 1850, and 1853 are written on the same lines as Stewart's and are regarded as having finally settled the question. Stewart died in 1883. Thomas Hawkes Tanner was born in 1824, studied medicine at King's College, London, and graduated as M.D. at St. Andrews University in 1847. In 1851 he was elected a physician to the Hospital for Women in Soho-square. In 1858 he took an active part in the foundation of the Obstetrical Society of London. In 1860 he was appointed an assistant physician for the diseases of women and children at King's College. He was a voluminous writer, his chief work being, "A Manual of the Practice of Medicine," which has passed through seven editions. He died in 1871. James Syme was born in Edinburgh in 1799 and studied medicine in that city, becoming a Member of the Royal College of Surgeons of England in 1821 and a Fellow of the Royal College of Surgeons of Edinburgh in 1823. He commenced lecturing on anatomy in Edinburgh in 1823, added a course on surgery in 1825, and in 1833 was appointed Professor of Clinical Surgery in Edinburgh University. In 1838 he was chosen surgeon-in-ordinary to the Queen in Scotland. He acquired great celebrity both as a teacher and a surgeon and was the author of several published works, among which may be mentioned "On the Excision of Diseased Joints" and "The Principles of Surgery." He introduced the operation for excision of the elbow into this country and devised an amputation at the ankle-joint which bears his name. He died in 1870 and was succeeded in the chair by his son-in-law, Mr. (now Lord) Lister, who had previously been Professor of Surgery in Glasgow University. William Stokes was born in Dublin in 1804. He studied medicine and graduated in 1825 in Edinburgh and was the same year elected physician to the Meath Hospital in Dublin. In 1838 he founded the Pathological Society of Dublin and in 1839 the University of Dublin conferred upon him the degree of M.D. He discharged the duties of Regius Professor of Medicine in the Dublin University from 1843 and was elected F.R.S. in 1861. He was long the undoubted head of his profession in Ireland and wrote several important works, among which are included "Diseases of the Heart and Aorta" and "Lectures on Fever." He died in 1878. Octavius Sturges was born in London in 1833, served in India as a lieutenant of artillery, returned to England in 1857 and studied medicine at St. George's Hospital and Cambridge University, graduating there as M.D. in 1867. He became assistant physician at the Westminster Hospital in 1868, physician in 1875, and lectured there successively on forensic medicine, materia medica, and medicine. He delivered the Lumleian Lectures at the Royal College of Physicians of London on Diseases of the Heart in Childhood. He died in 1895. Thomas Sutton was born in Staffordshire in 1766 or 1767. He studied medicine in London, Edinburgh, and finally in Leyden, where he graduated as M.D. in 1787. He practised at Greenwich and to him is due the discrimination of delirium tremens from the other diseases with which it had previously been confounded. He died in 1835. Sir Robert Tabor or Talbor was born in Cambridgeshire in 1642 or 1643 and was apprenticed to a Cambridge apothecary. He devoted his attention to improving the methods of administering cinchona bark in the treatment of ague, and having prescribed it with success for Charles II. he was appointed one of the King's physicians in ordinary and was knighted in 1678. He also attended the Dauphin and the Queen of Spain. He died in 1681. Alfred Swaine Taylor was born in Kent in 1806, studied medicine at Guy's and St. Thomas's Hospitals, and took the diploma of the Apothecaries' Society in 1828. The next few years he passed mostly on the continent, but in 1831 he accepted the professorship of Medical Jurisprudence at Guy's Hospital, then first created, and he held the office till 1877. His services were for a long period in much demand as a witness in criminal investigations and his works on medical jurisprudence and on poisons are standard authorities. From 1844 to 1851 he was editor of the *London Medical Gazette* prior to its fusion with the *Medical Times*. In 1845 he was elected F.R.S. and in 1852 he received the honorary degree of M.D. from St. Andrews University. He died in 1880. Thomas Sydenham was born in Dorsetshire in 1624, served in the Parliamentary army as a captain of horse during the Civil War, on its conclusion entered Wadham College, Oxford, in 1647, and was created Bachelor of Medicine in 1648 at a very early stage of his medical studies. He began to practise as a physician in Westminster about 1655, obtained the Licence of the Royal College of Physicians of London in 1663, and took the M.D. degree at Cambridge in 1676. He died in 1689. His biographer (Dr. J. F. Payne) says of him: "His chief contributions to medicine were: first, his observations on the epidemic diseases of successive years which have been the model of many similar researches; next, that he gave the first description or clear discrimination of certain special diseases, such as chorea, hysteria, and several others; finally, in practical medicine he introduced the cooling method of treating the small-pox, which was new at all events in English practice, and he helped to bring in the use of bark in agues. By these discoveries and by the method of studying diseases which he introduced Sydenham is admitted to have made an epoch in medical science."

An Atlas of Bacteriology. By CHARLES SLATER, M.A., M.B. Cantab., M.R.C.S. Eng., F.C.S., Lecturer on Bacteriology, St. George's Hospital Medical School; and EDMUND J. SPITTA, L.R.C.P. Lond., M.R.C.S. Eng., F.R.A.S., formerly Demonstrator of Anatomy, St. George's Hospital Medical School. London: The Scientific Press, Limited. 1898. Price 7*s.* 6*d.* net.

WITH each succeeding year, as surgery and preventive medicine progress, the fundamental facts upon which they depend are brought more prominently forward and it is owing to the importance of bacteriology in connexion with these sciences that this branch of pathology is being more and more recognised as a subject with which all medical students ought to be familiar. It is nevertheless much to be regretted that up to the present sufficient time has not been devoted to instruction in the practical part of the subject, for it is only by conscientious and painstaking practical work that a really useful knowledge of asepsis can be gained.

It is no doubt difficult to find leisure for a comparatively new study in the already over-filled days of the medical student and it is only by omitting some portion of the accepted curriculum that a place can be found for practical bacteriology. But few thoughtful people will be inclined to dispute the statement that its study is of more real value than some of the subjects now regarded as essential.

It is with pleasure that we note a growing tendency on the part of teachers and publishers to provide earnest students with the means of supplementing

the inadequate teaching usually offered. Already several foreign books of merit have appeared, one or two of which are written especially for beginners, and there has recently been published in this country a book by Dr. Slater and Mr. Spitta of St. George's Hospital which ought to appeal to everyone desirous of becoming familiar with the appearances presented by the various bacteria usually met with and as they occur in ordinary preparations in the laboratory.

The book to which we refer is called an Atlas of Bacteriology and this exactly describes it. The volume consists of some hundred photo-micrographs taken directly from preparations made in the ordinary way in the laboratory of St. George's Hospital and it illustrates exceedingly well the more important organisms with which a student ought to be familiar. And to one point in particular we wish to draw attention. The preparations chosen although good of their kind are not of that "show" character so often noticed in published works. Not infrequently, indeed, it would appear that the desire to instruct the reader has been lost sight of in the endeavour to show what excellent work may be done. It is not so, however, in the present instance. The illustrations are from good average preparations and as such are more useful to the student than first-rate picked and special preparations could ever be. For the student has to get an idea of what an average preparation looks like, and if he is only acquainted with extraordinarily good examples he will often find himself at fault both in making original observation and also in the examination room.

Coming more particularly to the details of the book under review we consider the authors have been well advised in providing a short photographic introduction which, whilst being so short as not materially to encroach upon the other portions of the book, is yet sufficiently detailed to indicate to anyone acquainted with the subject the conditions under which the negatives were produced. As is almost inevitable where every operator has his own methods of attaining similar results there are several points upon which we are at issue with the authors, and especially is this the case with regard to focusing, which we consider can best be accomplished by an examination of the aërial image with a simple lens, without the interposition of any ground-glass screen. The employment of the condenser is another subject upon which we might be inclined to question the authors' statements, but on this point so much difference of opinion prevails and the whole matter is so ill understood by the majority of workers that it would be useless to enlarge upon it here; and, indeed, we do not wish to cavil at instructions which would enable an operator to produce such excellent photographs as are here set forth.

A bacteriological introduction follows the photographic portion and this will prove very useful. It is short—occupying only 14 pages of large print—and admirably clear and explicit, each point as it arises being illustrated by capital photographs.

Next is taken up the life-history of the bacillus anthracis, and that this important organism is adequately treated will be realised when it is mentioned that no less than 10 photographs of its various phases are given. Thus the student is introduced at once to the best-known example of the great group of bacilli and is provided with a typical description to which he can always refer.

Next follow 10 illustrations of the bacillus tuberculosis and afterwards most of the more important organisms are adequately illustrated and described.

Of course, the book does not aim at providing an exhaustive description of the various organisms, but sufficient is given to link the illustrations together and to set forth the more salient points. The paper and print, as is usual with books issued by the Scientific Press, are excellent, and the same may be said of the reproductions of the photographs. On the other hand, the binding is atrocious and much of the usefulness of the book as a laboratory manual is sacrificed on that account. So badly is the volume put together, indeed, that it utterly refuses to remain open at a particular page and any attempt to force it to do so only results in destruction to the book and ruin to the student's temper. This is a subject upon which we have been obliged to speak on former occasions and we notice with regret that the evil is on the increase. The sooner publishers will recognise that it is to their interest to study the convenience of their customers the better it will be for everybody concerned.

The Surgical Complications and Sequels of Typhoid Fever. By W. W. KEEN, M.D., LL.D. With five Plates and nine Figures in the text. London: Rebman Publishing Company. 1898. Pp. 386. Price 17*s.*

THIS work is based on an analysis of 1700 cases of typhoid fever and practically includes every case published during the 50 years preceding 1896. In this statistical labour the author has been greatly assisted by Dr. T. S. Westcott. In 1876 Dr. Keen gave the Toner lecture at Washington on the Surgical Complications and Sequels of the Continued Fevers; this article is reprinted as an appendix at the end of the present volume, and it will be seen that in it for the first time an elaborate and complete study was presented of the surgical results of enteric fever. The present work is an expansion of this part of the original Toner lecture and is a veritable encyclopædia on the subject. As already hinted this volume does not profess to include all the literature since 1895 and though it covers some of the ground up to January, 1898, it is not absolutely up to date. After a pathological chapter dealing with the bacteriology of typhoid fever and containing numerous references to typhoid infection of different organs without typical intestinal lesions, the author proceeds to a minute consideration of typhoid gangrene, a subject which he had previously taken for his Shattuck lecture in 1896. The sections on the articular and osseous manifestations of typhoid fever contain many interesting deductions; besides typhoidal arthritis properly so-called rheumatic and septic forms may occur in connexion with the disease. In 84 cases of typhoid arthritis dislocation occurred in more than half and nearly always in the hip. With the exception of those of the larynx which are very fully described, the most frequent typhoid sequelæ are met with in the osseous system and of these 237 examples are collected, periostitis (110) and necrosis (85) making up the bulk of the lesions. The reader naturally turns to the valuable and practical section on the operative treatment of intestinal perforation; it there appears that in 83 collected cases where operative measures were adopted 16 recovered, or 19·36 per cent., that the second 12 hours after perforation is the most favourable time for operation, and that after 24 hours there is practically no hope of recovery. An interesting chapter is devoted to the complications of the liver and gall-bladder and Professor Schweinitz has contributed a special article on the ocular complications. In conclusion, we may say that this work must long remain a standard source of reference on the complications and sequelæ of typhoid fever and cannot fail to be of the greatest value not only to surgeons but also to physicians.

LIBRARY TABLE.

The Care of Public Health and the New Fever Hospital in Edinburgh. By JAMES POLLARD, C.A., F.S.S. Second edition. Edinburgh: T. and A. Constable. 1898. Pp. 44.—The first record of municipal provision being made by the city of Edinburgh for the protection of the people from

disease was in 1497. In that year an epidemic of grandgore or "French pox" broke out and seems to have proved a dreadful scourge; the victims as soon as they were attacked were deported to the adjacent island of Inchkeith where they died in large numbers. In the year of the Scottish defeat at Flodden (1513) there was an outbreak of plague and it is recorded that the town council caused wooden houses to be erected to which the patients were carried. Many things have happened since that time. In 1885 the town council came into possession of the old buildings of the Royal Infirmary and made use of them for the treatment of infectious disease, but the accommodation having been found insufficient a property of 130 acres has recently been acquired outside the city, and of this ground about 40 acres have been set apart for an hospital of 600 beds distributed as follows: scarlet fever, 320 (in seven pavilions); typhoid fever, 80 (in two pavilions); measles, 80 (in two pavilions); typhus, 10; diphtheria, 30; chicken-pox, 20; whooping cough, 20; erysipelas, 30; and probationary, 10. The present description of the new buildings is very complete, and is illustrated by 18 large plates of bird's-eye views, plans, and elevations. Plans of individual wards are drawn on a scale of 25 feet to one inch, which of course shows a great deal of detail.

The Student's Medical Dictionary. By GEORGE M. GOULD, M.D., A.M. Tenth edition. London: H. K. Lewis. 1896. 8vo, pp. 701. Price 14*s*.—When a book reaches its tenth edition it is a proof that the work in question is not only a good one but is appreciated as such, two factors which do not by any means always go together. The present book is designed especially for students, and although it will, of course, not take the place of Dr. Gould's monumental work "The Illustrated Medical Dictionary" it will be found to contain everything that a student can want for his average work. A book of this kind is practically an essential for the modern worker since the area of professional literature is constantly being enlarged by new words and phrases. Too much cannot be said in praise of "The Illustrated Medical Dictionary" and we may almost say the same for the Student's Medical Dictionary, except of course that it covers a smaller area of research.

Ambulance Lectures: First Aid to the Injured. By SAM. OSBORN, F.R.C.S. Eng. Fourth edition. London: H. K. Lewis. 1899. Pp. 150. Price 2*s*.—This useful little book has been translated into eight languages, namely, Chinese, French, German, Greek, Italian, Japanese, Spanish, and Hindostani. It consists of six lectures delivered to classes organised under the control of the Order of St. John of Jerusalem and is fully illustrated. The lectures, as beseems discourses delivered to a lay audience, are couched in very simple and practical terms and their scope may be indicated by the author's own words: "Remember that these lectures are not given to make you amateur surgeons, nor to enable you to act independently of professional help, but merely to assist in saving life and relieving pain until that help can be procured." The book is admirably adapted for this purpose and should be of the greatest possible use not only to policemen, railway-men, and the like, but also to travellers.

Dod's Parliamentary Companion, 1899. London: Whittaker and Co. Price 4*s*. 6*d*. This useful little book maintains the pitch of excellence to which we are accustomed in former issues. It is well up to date, as may be seen from the fact that the death of the Duke of Northumberland, which occurred on Jan. 2nd, is duly noted. The members of the medical profession in the Houses of Parliament are nine in number—one in the House of Lords, Lord Lister, and eight in the House of Commons, namely, Mr. Ambrose, Sir Charles Cameron, Dr. Farquharson, Sir Walter Foster, Dr. MacDonnell, Sir William Priestley, Dr. Tanner, and Sir Robert Finlay, who although he graduated M.D. left the practice of Medicine for that of the Law.

Whitaker's Titled Persons. London: J. Whitaker and Co. 1899. Price 2*s*. 6*d*.—We have received the third issue of this good little book of reference which has undergone considerable enlargement since its original issue. All titled people are not important and all important people do not (for this reason or that) possess titles, but as a general rule it is a prominent citizen who has titular distinction. Persons with titles are consequently much quoted for their opinions, much employed as figureheads, and are not unknown upon prospectuses, so that it is often necessary for the public to know exactly who they are. In "Titled Persons" we find set down in alphabetical order the name, style, and dignities of all British subjects who have gained or inherited titular distinction. A neat arrangement enables us to sort the cadets of the great families so that we are able to trace back any particular Russell, Campbell, or Stewart to his or her parent stock. A very handy little book.

Sell's Dictionary of the World's Press and Annual of Useful Commercial Knowledge. Vol. I.: Newspaper Section. Pp. 944. Price 4*s*. Vol. II.: Commercial Section. Pp. 692. Price 4*s*. London: Henry Sell. 1899.—Sell's Dictionary of the World's Press makes its nineteenth annual appearance and for the first time in two volumes. Those who remember the modest serviceable little book upon which this great and comprehensive dictionary has been founded may well regard it as an object lesson in evolution. The particular departure of this year's issue is the summarising, primarily for the use of advertisers, of all information likely to be useful with regard to matters of commerce, of navigation, of life insurance, &c. Full particulars of all newspapers published in the United Kingdom are given in vol. i. and for the convenience of those who may require a list of the world's press without referring to that volume a great variety of information relative to home and foreign newspapers is included in vol. ii. No large office or business house can dispense with Sell's Dictionary.

JOURNALS.

Archives Générales de Médecine. Paris. January, 1899.—Four original papers appear in this number. The first is by the late M. V. Hanot on La Cirrhose de Budd or cirrhosis of gastro-intestinal origin by auto-intoxication. The author thinks that this condition is far from being exceptional. The second article is by Dr. A. Brault on the Production of Glycogen in the Tissues which surround Tumours. Well-executed coloured illustrations accompany the text. Dr. M. Kippel writes on the Nervous Symptoms of Cancer. He divides his subject into two main divisions, the symptoms produced by the pressure of the tumour and those dependent on the cachexia. Amongst other clinical phenomena described are the neuro-muscular reaction and debility (lesions of the muscles, the nerves, and the marrow), tachycardia, delirium, &c. This contribution contains much interesting and valuable information. The fourth article, by Dr. Glatenay, is on Acute Osteomyelitis of the Sternum.

The Canadian Journal of Medicine and Surgery. Toronto. January, 1899.—The original contributions in this number include a paper on "Club-Hand" by Dr. B. E. McKenzie. Several cases are detailed, the descriptions being accompanied by some good illustrations. Dr. A. B. Eadie writes on Antitoxin in the Treatment of Diphtheria. He considers that the introduction of antitoxin has robbed this disease of most of its terrors and that if all the patients could be seen early the mortality would certainly sink to a very low point. Dr. A. G. Sherbrooke sends a contribution entitled "Diphtheria with Special Reference

to the Laryngeal Cases requiring a Choice between Tracheotomy and Intubation." He considers that both methods have their advantages and disadvantages, but when the operation is possible he prefers intubation. Another interesting communication is by Dr. E. Laberge on Infection and Serotherapy. This paper was read at the Canadian Medical Association, held at Quebec in 1898. Dr. Louis Fischer writes on Therapeutic Suggestions for Children, including Pulmonary Gymnastics. A case of Ectopic Gestation is recorded by Dr. H. E. Vaux, of Brockville, whilst a useful paper on Genito-urinary Instruments required by the General Practitioner is written by Dr. F. C. Valentine, Professor of Genito-urinary Diseases in the New York School of Medicine.

Analytical Records FROM THE LANCET LABORATORY.

IVORY DUST.

(T. PADMORE AND SONS, 118, EDMUND-STREET, BIRMINGHAM.)

IVORY dust is composed chiefly of phosphate of lime and cartilaginous tissue. This specimen gave in our hands the following results on analysis: moisture, 13·31 per cent.; cartilaginous tissue, 28·90 per cent.; mineral matter, 56·00 per cent.; and resinous matter, 1·79 per cent. It yields an excellent white jelly on prolonged boiling with water which is regarded as possessing a high nutritive value. Ivory jelly has been considered from remote time to be a popular restorative, but in view of the above analysis it is doubtful whether it possesses any special nutritive value. It is of course highly nitrogenous, containing an osseous substance analogous to ossein in bone and a very large proportion of bone-producing salt. We are aware that some practitioners, bearing in mind its composition, have prescribed ivory jelly as a food in certain cases and we should be glad to learn whether any distinct physiological or dietetic benefit has resulted.

"SYLVESTER'S" BEEF AND MALT BISCUITS.

(T. W. HOLMES AND CO., 88, WEST-STREET, GATESHEAD-ON-TYNE.)

These biscuits are pleasantly crisp and of good flavour. They evidently contain more malt extract than beef, since the total amount of nitrogenous principles is decidedly lower than might be expected; indeed, they contain a smaller proportion of nitrogenous substances than wheat flour itself. Of course, the addition of beef would contribute considerably to the nitrogenous contents of the biscuits. The mineral matter contained a high proportion of potassium phosphate due to the addition of malt extract. The analysis was as follows: moisture, 10·60 per cent.; nitrogenous matters, 10·26 per cent.; mineral matter, 2·75 per cent.; carbohydrates, with a small quantity of fat, 76·39 per cent. The carbohydrates were largely in the soluble condition owing to the presence of malt sugar. The biscuits would be more satisfactory from the nutritive point of view if a higher proportion of beef substances were added. As it is the analysis indicates very little increased nitrogenous value.

DIGESTIVE TEA.

(JOHN DAWSON, 67, SALISBURY-ROAD, KILBURN.)

We do not believe in "digestive tea." Several processes have been suggested for the treatment of tea, the object of which has been either to remove or neutralise the tannin, but this has seldom been done with success, the delicacy of the flavour and aroma of tea generally suffering. In the present instance the treatment appears to have been with hops. Doubtless to some extent the tannin is rendered insoluble by this means. The infusion has a soft, modified flavour and is quite free from harshness of character even after standing for some time in contact with the treated leaf. The important stimulating alkaloid caffeine is not affected by the process as we extracted from the tea a normal quantity. Possibly this tea would suit some persons who find ordinary tea disturbing to the digestive functions.

ROYAL COFFEE.

(PAYTON AND CO., TOWER-HILL WAREHOUSE, E.C.)

No admixture of any kind could be detected in the specimen submitted to us. It yielded an infusion of excellent character possessing a full and agreeable flavour characteristic of the aromatic constituents of genuine and well-roasted coffee. These results might be expected considering the somewhat high price of the coffee which is 2*s.* per pound. It is evidently roasted with care, due regard being given to preserving the aromatic and essential constituents of the berry.

New Inventions.

A NEW SPONGE-HOLDER.

AT the suggestion of Mr. H. Bendelack Hewetson, ophthalmic and aural surgeon to the Leeds General Infirmary, Messrs. Reynolds and Branson of Leeds have made an improved sponge-holder for use in operations on the naso-pharynx where there is a special liability to free hæmorrhage and a consequent necessity for firm and rapid sponging. The stem of the sponge-holder is hollow, and through it is passed a piece of whipcord tied to a small sponge. The two ends of the cord are brought out at the handle, as shown in the illustration, and are tied to a sliding ring, which slips over the graduated handle until it becomes fixed and thereby retains the sponge securely in the slightly trumpet-shaped orifice of the holder, beyond which it projects all round. To enable the instrument to be cleaned and sterilised it is preferably made of celluloid, and is accompanied by a small brush attached to a twisted wire, with a hook at the opposite end for replacing the cord after cleansing. The holder can thus be kept perfectly clean, and it is so simple in its construction that it is not likely to get out of order. The price is 7*s.* 6*d.* in celluloid and 3*s.* 6*d.* in vulcanite. Mr. Hewetson has made various trials with wire, catgut, &c., for fastening the sponge, in place of whipcord, but he is inclined to think that whipcord is the best.

A NEW AXIS-TRACTION FORCEPS.

THE accompanying figure shows an axis-traction midwifery forceps suitable for both high and low applications which has proved satisfactory and reliable during a two-years' trial in all classes of cases. The fenestrated portion of the blades and the upper halves of the shanks follow the axis of the parturient canal. The lower halves of the shanks carry the lock and projecting lugs back towards the line of traction of the blades and keep the lock, even in high applications, outside of, and free from, the soft parts. The projecting lugs give the points and direction of traction for the fingers of the right hand. The handles, set at an acute angle to the lock and lugs, shorten the forceps, lie along the perineum, and afford a cross grip for the left hand. They also allow the necessary sweep towards the abdomen of the patient to be made without material loss of power or change of position and enable the right hand to keep up traction, thus freeing the left hand to deal with the head and perineum. In the

intervals of traction the handles can be released and the lock loosened with relief of pressure on the cranium and without fear of displacement. The subsequent relocking is simple and easy in all positions. Introduction is greatly facilitated as each half of the forceps is evenly balanced when held in position between the thumb and fingers at the lugs, while the handle projects upwards and backwards. When viewed

from before backwards the fenestrated portions of the blades are shorter and the cranial curves greater than the illustration would indicate. I have much pleasure in acknowledging the great care and attention bestowed in the fashioning of the instrument by Messrs. Archibald Young and Son, Edinburgh.

Kilmarnock, N.B. WILLIAM MCALISTER, M.B. Glasg.

ASEPTIC VACCINE EJECTOR.

WE have received from the Association for the Supply of Pure Vaccine Lymph, 12, Pall Mall East, S.W., a convenient appliance to be interposed between a tube of lymph and the lips of the operator who is about to make use of it. The principal feature of the ejector is a plug of cotton-wool contained in a two-part glass tube about two and three-quarter inches long into one end of which the operator blows

and the breath, filtered by the cotton-wool, escapes by a slender glass nozzle connected with a soft indiarubber tube about six inches in length. The tube of lymph having been opened in the usual way one end is inserted in this indiarubber tube, the junction is pinched between the finger and thumb, and the lymph is expelled by blowing into the ejector. The price of the ejector is 1*s.* 1*d.* in a case, free by post.

A PIPETTE FOR USE IN ESTIMATING UREA.

THIS pipette is a modification of the one belonging to Southall's apparatus for estimating urea, the rubber nipple at the broad end of the original pipette being replaced by a syringe arrangement which, I have found, greatly facilitates the introduction of the urine into the long limb of the bent tube. Air from the upper part of this pipette is never expelled along with the urine, neither does any urine escape into the hypobromite solution before the nozzle of the pipette is really in the long limb of the decomposition tube. The tube or body of the pipette is about seven and a half inches long and of glass, the nozzle being slightly curved. The movement of the piston is limited by collars on its rod, so that when it is pushed in as far as it will go and then drawn fully out it takes up exactly 1 c.c. The estimation of the urea in a sample of urine is performed as follows. Fill the bent tube with solution of hypobromite of soda just short of overflowing, then gently incline the tube to fill the long limb, then hold the tube in the vertical position and pour in an additional quantity of solution to fill the lower part of the bulb of the short limb. Now take up 1 c.c. of urine in the pipette, pass the curved end of the pipette through the short limb and into the open end of the long limb of the bent tube, and gradually expel the urine. Now draw the pipette out, let the bent tube stand for about half an hour, and then read off the volume of nitrogen gas. The nitrogen evolved by the chemical action of the urea on the hypobromite of soda passes up the long limb and displaces the hypobromite solution downwards. The long limb is marked with an English scale representing grains of urea per ounce of urine, and also with a metric scale representing centigrammes and milligrammes of urea per 1 c.c. of urine. The advantages claimed for this pipette are: (1) that it is accurate; (2) that it is easily worked; (3) that it takes little time; and (4) that it does not waste any hypobromite of soda. Messrs. J. Gardner and Son, Forrest-road, Edinburgh, are the makers.

Edinburgh. C. C. MURISON, L.R.C.P., L.R.C.S. Edin.

FIRST REPORT OF THE ROYAL COMMISSIONERS ON THE METROPOLITAN WATER-SUPPLY.

(Continued from p. 242.)

THE Commissioners report that a consideration of the evidence which they have collected as to the amount of water which can be spared by the Chelsea, Grand Junction, Kent, Lambeth, and West Middlesex Companies shows that the mere connexion of their mains with each other and with those of the Southwark and Vauxhall, New River, and East London Companies would not enable them to be of much assistance in case of emergency arising during the next summer. Such combination would only be effective if the Grand Junction, Lambeth, and West Middlesex Companies were to obtain additional statutory powers for the abstraction of water from the Thames and erect works for its treatment and improved arrangements for pumping.

The New River Company have been able to supply a large quantity of water to the East London Company during the late drought. On July 26th the New River Company reduced the amount of water which they took from the Lee at Ware and left it for the disposal of the East London Company. The water flowed down the river channel to Chingford and thence through the East London intake to the storage reservoirs at Walthamstow. The quantity delivered to the East London Company from July 26th to Oct. 31st, 1898, was 569,882,000 gallons. In order to make up the deficiency the New River Company increased their rate of pumping from the wells. The average amount of water supplied daily by the New River Company to the East London Company during the period mentioned was 5,815,000 gallons daily. The Commissioners point out that this method of giving assistance to the East London Company is very simple and effective and as the water is unfiltered no additional tax is laid on the filtering plant of the New River Company. Connexions have been made between the 30 in. main of the Grand Junction Company in Oxford-street, opposite Poland-street, and the 24 in. main of the New River Company at the junction of Rosebery-avenue and Gray's Inn-road, and the West Middlesex Company have effected a junction with the new main made to form the first-mentioned connexion. The Grand Junction and West Middlesex Companies are therefore now able to supply to the New River Company 5,000,000 gallons daily. Such a supply could not, however, be afforded in the summer because those companies could not spare it. The Commissioners point out that the large reserve supply possessed by the New River Company and its wells places it in a more advantageous position than that occupied by the companies previously mentioned.

The Southwark and Vauxhall Company has been able to deliver a large quantity of water to the East London Company during the drought. A connexion was made by carrying a 20 in. main through the Tower Subway in continuation of the 20 in. main of the Southwark and Vauxhall Company. On the Middlesex side a new main was connected with the system of the East London Company. The water was supplied from Nunhead reservoir and the pressure was sufficient to enable the Southwark and Vauxhall Company to supply 6,000,000 gallons a day to the East London Company's district. This arrangement has been rendered possible by a supply of water through a 42 in. main from Hampton to Nunhead and the mains possessed by the company still have a carrying capacity considerably in excess of the requirements of their customers. The Southwark and Vauxhall Company before

the year 1897 had a statutory right to draw only 24,500,000 gallons daily from the Thames. During that year an Act was passed and confirmed by a further Act in 1898 authorising an additional abstraction of water to the extent of 20,500,000 gallons a day. An additional amount of 2,250,000 gallons is derived from a well. The amount required for the customers of the company is at present about 37,000,000 gallons daily, thus leaving a surplus of 13,000,000 gallons, but the company is prohibited by its Act of 1898 from selling water to other companies.

The East London Company require increased storage capacity and are at present obviously in no condition to transfer water to other companies.

The fourth section of the report is devoted to a review of the present position of the East London Company and of the measures necessary to ensure a continuous supply of water for their customers. To this question the Commissioners have devoted special attention and have considered the measures should not relieve the company from the obligation of improving as rapidly as possible their own sources of supply so that they may make themselves independent of extraneous assistance. In concluding their report on this branch of the subject the Commissioners point out that if the existing connexion with the Southwark and Vauxhall Company's mains had been made early in the year 1898 and if the fullest available supply had been taken from the New River and from the Southwark and Vauxhall Companies from June 20th of last year a constant supply might have been maintained in the East London Company's district during the whole of last year.

The fifth section of the report is devoted to an account of the views of directors and of the engineers regarding the expediency of adopting a general scheme of intercommunication. Briefly, it is pointed out that the associated companies by their counsel intimated that intercommunication was practicable and convenient, but the evidence given by the

TABLE PREPARED BY THE ROYAL COMMISSIONERS GIVING STATISTICS WITH REGARD TO THE WATER-SUPPLY OF THE EAST LONDON WATERWORKS COMPANY.

—	July.	August.	September.	October.	Grand total.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.
Required to meet demand in 1899	1,426,000,000	1,395,000,000	1,320,000,000	1,302,000,000	5,443,000,000
Supplies in 1898 from the company's own resources	1,362,326,000	1,094,610,000	743,550,000	716,472,000	3,916,958,000
Estimated deficiency to be met by contributed supplies and by increase in the company's resources	63,674,000	300,390,000	576,450,000	585,528,000	1,526,042,000
Estimated average daily deficiency to be met as above	2,054,000	9,690,000	19,215,000	18,888,000	12,406,000

character and extent of the intercommunication of mains which will be necessary to secure a constant supply for East London in case of a drought similar to that which obtained during the year 1898. It is pointed out that the storage reservoirs possessed by the East London Company at Walthamstow are capable of holding 1,200,000,000 gallons, and of this water the greater quantity can be conveyed by gravitation to the filters at their station at Lee Bridge. Some water in the reservoirs, however, could only be utilised by pumping out the lower part of the reservoirs. The amount of this bottom water is 164,000,000 gallons.

On June 20th, 1898, the reservoirs of the company were full. On August 22nd they contained 308,000,000 gallons; the directors of the company then restricted the supply to two periods of three hours each daily, and on Sept. 3rd the supply was further limited to two periods of two hours each. On Nov. 23rd a longer daily supply was given; a constant supply to part of the district was resumed on Dec. 7th and to the whole of the district on Dec. 14th. For the year 1899 the Commissioners assume that the New River, the Grand Junction, the West Middlesex, and the Southwark and Vauxhall Companies will be able to contribute to the East London supply in case of need. From the evidence they have taken the Commissioners have come to the conclusion that the estimated deficiency may be met by contributed supplies and an increase in the companies' own resources. In the report a table compiled by the Commissioners is given showing for the four months, July, August, September, and October, (1) the amount of water which they estimate will be required to meet the demand; (2) the amount of water which the company obtained from their own sources during the corresponding months of the year 1898; (3) the estimated deficiency to be met during those months of the present year; and (4) the estimated average daily deficiency to be met. The table is given above.

The Commissioners report that having regard to the fact that the East London Company had been able to carry forward a considerable store of water from the year 1897 to 1898, and that it is possible that they may have no such store to fall back upon in the June of the present year, and having regard also to the fact that there is an increasing annual demand for water, they recommend that arrangements should be made as soon as possible whereby an auxiliary supply of not less than 20,000,000 gallons daily should be made available for distribution in their district. If this amount of water can be made available the system of constant-supply by the company would in their opinion be practically secured for some years to come. The Commissioners point out that these engineers of the companies showed that several of them thought that in the case of the companies which they represented no such extraneous help would be likely to be wanted. The evidence of the engineers has already been reported in THE LANCET. The report states that Sir Alexander Binnie, on behalf of the London County Council, gave it as his opinion that it was inexpedient to incur the large expenditure required by Scheme No. 2, because if a new supply were introduced from Wales different arrangements for intercommunication would be suitable and necessary. The conclusion to which the Commissioners themselves have come has been already given. It is to the effect that intercommunication on well-considered lines is necessary from the consumers' point of view.

(To be continued.)

DEATH FROM ANTHRAX.—An inquest was held at the Bristol General Hospital on Jan. 19th upon the body of a haulier, aged 36 years, whose blood contained the anthrax bacillus. The deceased had a sore on his neck which he had probably rubbed against a sack. A verdict of "Death from anthrax poisoning" was returned.

PRIZES OF THE PARIS ACADEMY OF SCIENCES.—The *Revue Scientifique* of Jan. 21st publishes a long list of prizes proposed by the Paris Academy of Sciences for the years 1899, 1900, 1901, and 1903. The prizes in medicine, surgery, and allied subjects are as follows:—Prix Montyon, of 7500 fr. (medicine and surgery). Prix Montyon, of 750 fr. (experimental physiology). Prix Montyon, of 3000 fr. (hygienic improvements in dangerous trades). Prix Barbier, of 2000 fr. (discovery in medical, surgical, or pharmaceutical science, or in medical botany). Prix Bréant, of 100,000 fr. (cure or prevention of cholera). Prix Godard, of 1000 fr. (anatomy, physiology, and pathology of the genito-urinary organs). Prix Serres, of 7500 fr. (application of embryology to physiology and medicine). Prix Chaussier, of 10,000 fr. (application of embryology to physiology and medicine). Prix Bellion, of 1400 fr. (works or discoveries conducive to health or to the improvement of the human race). Prix Mège, of 10,000 fr. (completion of an essay on the progress of medicine). Prix Lallemand, of 1800 fr. (works relative to the nervous system). Prix du Baron Larrey, of 1000 fr. (naval or military medicine, surgery, or hygiene). Prix Pourat, of 1400 fr. (specific characters of the contraction of different muscles). Prix Philippeaux, of 890 fr. (experimental physiology). Prix La Caze, of 10,000 fr. (works or memoirs contributing to the progress of physiology.)

THE LANCET.

LONDON: SATURDAY, FEBRUARY 4, 1899.

THE question as to whether it is or is not desirable that phthisis should be made a notifiable disease has recently been the subject of discussion before different societies; and it is once more dealt with in the address by Dr. ARTHUR NEWSHOLME on the Prevention of Phthisis of which we reproduce a lengthy abstract. Opinion in this matter may be said to be divided in the medical profession, although for the moment it would seem, as far as can be judged, that only a minority favour the proposal. So far as the public are concerned there is but little evidence that they take any particular interest in the question, unless resolutions advocating the notification of phthisis passed by a few sanitary authorities having medical officers of health in favour of the system may be regarded as representative of public opinion in those localities. And, lastly, there is the official attitude towards the subject as represented by the refusal of the Local Government Board to add phthisis to the diseases made notifiable under the Infectious Diseases (Notification) Act, 1889.

As fairly typical of the two sides of the question we may take Dr. NEWSHOLME'S address as setting out the reasons for and the third of Sir RICHARD THORNE'S recent Harben Lectures those against the desirability of making phthisis notifiable in this country. Briefly put, the arguments against the compulsory notification of phthisis have been: (1) that the Act under which it is proposed to effect the notification of infectious diseases was never intended to apply to a disease of long duration such as phthisis, but was limited to diseases having a brief infective stage during which it is no hardship to control the movements and liberty of the individual; (2) that to attempt any such control in the case of phthisis would be likely to interfere with the prospects of phthisical persons who must necessarily during many years of their malady be able to gain a livelihood in order to maintain themselves and often their families also; and (3) that the risk of losing a remunerative occupation and the risk of coming under the control of a sanitary officer would debar many persons suffering from incipient phthisis from seeking medical advice and in this way the object of the notification would be largely frustrated.

The answer to these objections is mainly that under a proper system of notification they would not be likely to arise. Thus, it is said that the notification of phthisis could be made confidential; that the visits to the phthisical person would in most cases consist merely of notices left at the private address of the patient; and, again, that even such limited action as is involved in precautionary measures of this sort should be left almost entirely to the medical attendant and his patient, provided the medical officer of health were informed of each change of address in order to secure the newly coming tenant from the risk of infection left behind by the former occupant. The New York system is again referred to, especially by Dr. ARTHUR RANSOME, an unofficial advocate of the system, who explains that though the data concerning cases of phthisis in private houses and under the care of private physicians in that city are recorded the patients are not in any way interfered with and that even circulars of information are not sent to them except by special request of the attending physician.

Action on these several lines would, of course, involve new legislation in this country, and so far as we are aware this has never before been definitely asked for or even indicated. The demand has been to include phthisis in an Act which has involved and would permit of action of an infinitely more stringent character, and we are more than doubtful whether even the medical profession are prepared to endorse the demand, as it has hitherto been formulated, on a sort of understanding that the medical officer of health is to be the sole judge whether in one and another case of phthisis he shall exercise the powers conferred upon him and upon sanitary authorities as regards infectious disease or not. These powers are very wide indeed, and they were not framed on the assumption that they might be applied to a chronic disease often lasting over a long series of years. In this country the medical officer of health will often, if not generally, be competing for medical practice with the notifiers, and even in those cases of infectious diseases where the power of intervention is limited to a few weeks only instead of being spread over a series of years we cannot say that the medical officer of health has been uniformly judicious. Indeed, the complaints which we have received as to the very objectionable habit on the part of certain medical officers of health of revising the diagnosis of disease made by fellow practitioners and then recommending the non-payment of the notification fees have by no means ceased notwithstanding strong official condemnation of the practice.

Dr. NEWSHOLME, however, implies that personal visits should in all cases be paid by the medical officer of health to ensure the execution of the necessary hygienic precautions. On the other hand, Dr. RANSOME explains that in New York medical inspectors are specially detailed for this work and it is they who give verbal directions and leave circulars of advice. Some such arrangement would, indeed, be absolutely necessary in this country unless a vast number of phthisical patients were left altogether without inspection; indeed, it is quite certain that in populous and widely spread districts, such as are combined for the purposes of the appointment of medical officers of health in many parts of the United Kingdom, the New York system could not be applied without a complete change in our local sanitary administration. It must also be remembered that New York is a single city, not a country, and that we do not yet know the results of the system as regards this limited community where the practice only came into operation so recently as January, 1897.

But, assuming that under some new Act the powers of medical officers of health and of sanitary inspectors are limited to those which alone are justifiable on the basis of the New York experiment, we are by no means clear that in nearly every instance, as suggested by Dr. NEWSHOLME, the necessary inquiries and action could be carried out at the patients' homes instead of at their places of business so as

to avoid the risk of the loss of employment. Thousands of young adults live in houses of business and a large proportion of the remainder of those engaged in business could only be found in their homes late in the evening. This fact would enormously increase the difficulties of visitations and it is practically incredible that under present circumstances the action taken on notification could in by far the majority of districts have even the pretence of being private and confidential. And if it were not we feel certain that patients once exposed to the results of notification would in a large number of instances studiously avoid seeking medical counsel in the more curable stages of their disease and that the primary purposes of the proposed action would to that extent be frustrated.

Dr. NEWSHOLME urges that there might at least be local option. Local option is generally understood to have relation not so much to the wishes of a dozen town councillors acting under the influence of an able official, as to the actual wishes of the majority of the people. If therefore it were distinctly understood before a local election that certain members of a municipality intended to vote for a local Act granting the compulsory notification of phthisis and if under these circumstances a majority favourable to such an Act were returned we could see some justification for the demand in this form. The parallel of other local Acts for the notification of the acute specific fevers is urged in favour of similar local legislation as to phthisis without the conditions which we have named. But the cases are not parallel. The former Acts gave expression to a widespread medical opinion and to a practical unanimity on the part of the public health services, whereas in the case of phthisis this is most certainly not the case. Dr. NEWSHOLME himself records the resolution of the Society of Medical Officers of Health so recently as 1893 to the effect that it was "premature to recommend the compulsory notification of a chronic disease like phthisis." We know of no parallel to this resolution as regards the diseases which now are notifiable, and we feel convinced that with a view of educating the public the first step should be to pass an Act enabling sanitary authorities to pay for the voluntary notification of phthisis. We should then soon learn how far and amongst what classes such notification could be carried on without causing resentment and opposition on the part of the public.

In the meantime no country has performed such splendid work as has been achieved in England and Wales in the reduction of phthisis, and there is still room for much more action in the same direction. To this end it is essentially the private practitioner whose aid it is in giving advice as to the prevention of the disease that must be relied on. Pending some evidence as to much greater unanimity of medical and public opinion in the matter than at present exists we cannot agree with Dr. NEWSHOLME in his free condemnation of the Local Government Board. They can hardly be expected to act on the views of a small minority, however able its individual members may be.

THE discussion upon the Choice of an Anæsthetic recently held at the Society of Anæsthetists, if not wholly satisfying, is at least of considerable interest. Many speakers it is true devoted their energies to the well-worn theme of ether against chloroform but the trend of the discussion was rather towards establishing the position that in the various operations of surgery and in certain well-recognised conditions of patients it is a matter of paramount importance that the anæsthetic should be adapted to the requirements of the individual case. There is no doubt that this fact being once admitted matters of importance become ventilated as side issues but side issues of the first consequence. The position of the practitioner who undertakes the administration of an anæsthetic does not so much now as formerly resemble that of a junior assistant to the surgeon. If we go back a few years when anæsthesia became an accomplished fact we find that almost simultaneously with its inception the anæsthetist sprang into existence. In those days it is true he was an "etherist" at first and subsequently a "chloroformist." That SNOW in his elaborate work and through the brilliance of his experimental researches laid the foundation of the present school of anæsthetists there can be no doubt. SNOW did not *give* chloroform in the sense that he was conveyed by the surgeon to a particular nursing home and told to chloroform his patient. His function, as he recognised it, was to render the patient unconscious with the minimum of risk and with the maximum of comfort to the surgeon. That, we take it, is the ideal which the Society of Anæsthetists placed before itself when it undertook the discussion to which we refer. There can be no doubt that when the anæsthetist recognises the full responsibility under which he labours and is prepared by his experience to do justice to the possibilities of the case he becomes a far more useful personage than the mere rule-of-thumb administrator of chloroform or of ether, as the case may be. Whether such an accomplished addendum to the surgical *entourage* is required is for the public to determine as far as circumstances allow them a voice. We daily find patients more alive both to the discomforts and perils of inexpert anæsthetisation and more keenly sensible to their own requirements and the possibility of satisfying them.

To the surgeon the advantage of having the services of an anæsthetist who is really capable of comprehending the case is not perhaps always recognised but it is undoubtedly great. The anæsthetist if he be a man of experience sees not the practice of one but of many surgeons and so his observation of operations and of the way in which the patients behave under the anæsthetic during their progress is extensive. If, then, in difficult cases the skilled anæsthetist and the surgeon were to discuss the difficult points beforehand there is little doubt that the choice of the anæsthetic would be made with far greater precision and satisfaction to all persons concerned than when it is determined upon hurriedly at the time of the operation either by the anæsthetist or by the surgeon. More especially is this so if the anæsthetist has an opportunity of examining the patient at some period antecedent to the time of operation. As was pointed out at the meeting there are "etherists" who repudiate the use of chloroform and there are "chloroformists" who can see no advantages in the selection of ether. Mere predilection or the surviving superstitions of early professional training should not be allowed to replace the accumulated experience of years of observation and patient labour. All reasoning men whose

outlook is sufficiently extended must admit that no universal anæsthetic can be adapted to the hundred and one exigencies of disease in the patient or the multifarious requirements of modern surgery. To doggedly insist upon such a theorem is to predetermine failure if not fatality. When many speakers insist upon their own views it is hardly to be expected that any unanimity can exist in the conclusion arrived at. How far the danger of chloroform is so much greater than that of ether cannot at present be accurately gauged. In the first place, chloroform is the most extensively employed anæsthetic and is certainly given by persons devoid of special knowledge and often with the most limited experience. Secondly, it is alleged by many surgeons both here and abroad that the after-effects from ether are more severe and more prolonged than those resulting from chloroform. It was, however, a noticeable fact in the discussion that with the exception of Sir FELIX SEMON no speaker at the Society of Anæsthetists cited definite cases in support of this contention. Roughly speaking, it would appear that the anæsthetists as a body favour the employment of ether usually preceded by nitrous oxide gas while surgeons prefer chloroform, this preference for chloroform being in many cases due to the fact that the respiration is slowed and rendered more shallow and the blood-pressure lowered under that anæsthetic so that movements of breathing and hæmorrhage are both diminished. Mr. WARRINGTON HAWARD very aptly remarked that not only must the choice of the anæsthetic be considered from the point of view of the surgeon and the point of view of the anæsthetist but also from that of the patient, and according to him the patient's first consideration is his individual safety. Even here the matter is not devoid of difficulty because the personal safety of the patient involves not only his being brought safely through the immediate perils of the operation but also through those which occur from such after complications as severe vomiting, irritation of the mucous membrane of the respiratory tract, and so on.

There was unanimity among the speakers that cocaine, at least in the case of children, was a drug too uncertain and too dangerous to admit of general application. Naturally the subject of local anæsthesia by RECLUS'S and SCHLEICH'S methods was spoken of, but, as Mr. BARKER pointed out, our experience at present is slight for any definite opinion to be advanced, although continental opinion is favourable to its use in appropriate cases. This discussion will prove of value if it draws attention to the possibilities of modern methods of producing anæsthesia and removes from the confines of empiricism and routine the administration of anæsthetics in the more complicated operations of modern surgery.

THE near approach of the meeting of Parliament leads us to ask what will be the bearing of this session on the interests of the medical profession and on the furtherance of those ends for the pursuit of which the medical profession exists. It may seem to some that between a narrow parochialism which would starve every public provision for the health of communities and a broad imperialism which takes the whole world into its purview, the quiet claims which the science of medicine and its practitioners have on the Legislature have little chance of receiving any adequate consideration, especially in a Parliament so constituted as to give undue voice and weight to the noisiest and least intelligent of the people. There is some truth in these views and too much justification of them in recent events. But we must not despair. If the representatives of the great art and science, down to its youngest general practitioner in the remotest parish of England, Ireland, or Scotland, will but steadily work on in the lines of the latest truth and the ripest experience there is not a Parliamentary constituency or a Member of Parliament that will not sooner or later come to confess that the medical profession has a right to be heard in Parliament whenever it presents well-considered and well-founded recommendations touching the health of the people or its own claims. We have still some days to wait for the Queen's Speech and it would be affectation to pretend that we have been let into any secrets concerning the subjects of that important pronouncement. But we shall be safe in assuming that two or three questions affecting the public health will be brought to the attention of Parliament and that others may present themselves in the course of the coming session.

The first medical subject which occurs to us as claiming the attention of Parliament is that of vaccination. The Government may be confidently trusted to remember that the condition on which Lord LISTER'S support and that of many other supporters was given to the remarkable legislation of last year was that in the coming session a measure for promoting revaccination should be introduced. We give the Government full credit for reluctance in making the concessions which it did make to the conscientious objector; though we can scarcely believe that its members foresaw the immense surprise which their action has excited abroad, the keen dissatisfaction which it has occasioned among their own supporters at home, or the feelings of mingled triumph and disrespect which it has produced among those for whose benefit and appeasement it was intended. Be this as it may, the law of the land is presumably that children shall be vaccinated, and the expectation of that part of the community which is still capable of reasoning is that the Government will place among the urgent business of the Session a measure for promoting revaccination. The present calm will not always continue. The law of 1898 has multiplied conscientious objectors beyond all expectation. But they soon change their minds. At Gloucester multitudes of them flocked to the vaccination stations on the outbreak of small-pox, and unless all experience is to go for nothing such epidemics will be multiplied on a larger scale. The very least that the Government can do is to fulfil the promise of last year with as little delay as possible and in so doing give the best proof it can that those in power remain unshaken in their belief that vaccination and plenty of it is the only security of nations against a plague which is as fatal and as hideous as it ever was. Only so can the Government uphold its remaining credit on this matter and keep terms with the medical profession and the distinguished peer who had such misgivings in consenting to the "tremendous experiment" which is now being tried in England.

Another question deeply affecting the health of London is that of the metropolitan water-supply. The Royal Commission is nearing the end of its work—at least, of that part of its work which consists in taking evidence. There is no lack of material in this shape, but the troubles of the Commission will begin when it has to decide between the very sharply divided opinions of practically two sets of witnesses, the one set believing it possible to get all that is needed from the existing supplies provided a better understanding between the companies can be established for mutual help in seasons of drought and difficulty; the other, representing a majority of the London County Council, believing it impossible to meet the growing demands of London out of the present sources and advocating a scheme for bringing additional supplies from Wales or elsewhere. Bills for promoting these rival schemes are before Parliament. The Report of the Royal Commission will be presented here long and then Parliament will have to discharge one of the weightiest and most difficult duties which it can have to perform in the sphere of domestic legislation.

We may confidently expect also that early in the session the subject of food adulteration will be brought forward for discussion, and it is to be hoped that the present Sale of Food and Drugs Act will be amended in several important respects. Mr. WALTER LONG has stated that he is to be responsible for the introduction of the new Bill.

Other questions with a medical bearing or affecting the health of the people are likely to arise. The recent trials for the crime of producing abortion have brought to light a state of the law which tends to hinder conviction, and it is probable that the Government itself will see the necessity of proposing a change. The change is the more urgent as there is much reason to believe that the crime is more common than is generally supposed. The new lights on tuberculosis and the ways in which it is originated and spread lead many to think that legislation should be invoked for its notification and for enforcing measures for its prevention. But the language of Lord SALISBURY at the meeting at Marlborough House—of which public opinion seemed to approve—was in favour of relying more on the spread of public intelligence. One measure seems to be loudly and generally called for—the establishment of public abattoirs where the slaughter of animals can be conducted with the greatest attention to hygienic and humane considerations and by which the detection of disease would be most facilitated. We may hope that in the course of the session the Royal Commission on the Licensing Laws will make its report, but it is not at all sure that this will be done soon enough to enable the Government to propose legislation on a question so profoundly affecting public health and morals as well as the pecuniary interests of a large and powerful trade. The Government which has given us the Inebriates Act, 1898, may be looked to for such improvements in the licensing system as will tend to diminish the number of inebriates.

It is scarcely probable that any legislation directly affecting the medical profession or its organisation and discipline will be asked for or attempted this session. The General Medical Council does not meet till May, and it has not yet made up its own mind as to what is needed and what is practicable. There are many reasons why the Council should try to come to some practicable conclusions on these subjects and that without much more delay. The Midwives Bill will again be presented to Parliament with some additional claims to attention, but it remains to be seen whether it can be fully adapted to the views of the General Medical Council as suggested by the Lord President. And even if the General Medical Council be satisfied the profession at large may not be.

Annotations.

"Ne quid nimis."

THE MODERN MIDWIFE.

ON Jan. 27th an inquest was held at Lincoln by the coroner, Mr. Trotter, upon the body of an infant, aged 20 days, who died on Jan. 25th. The child in question was one of twins, was weakly from birth, and was said to have suffered from convulsions, but no medical man was called in because the nurse in attendance said, according to the evidence of the father, that no doctor was necessary, for no one could do more than she, the nurse, was doing. Nurse Southwell, who gave evidence, said that she was a trained nurse of the Maternity Society. She argued that no medical man could do more than she had done, but she had told the mother if she was not satisfied to call one in. She knew from the first that the child would not live and she told the parents that if anything happened during the night she would give them a note to say that the child died from convulsions. The coroner here asked if the witness thought it her duty to say that a case was hopeless without having her opinion backed by a medical man. The witness replied that she had done it in other cases repeatedly, that when she was in training she did the same thing, and had always understood that she was quite at liberty to do so. She then asked the coroner what she should do, for "when we send for a medical man to see an immature child he refuses to come." Dr. McFarland said that the child was very small but not premature in his opinion. Death was due to wasting and he thought that certainly a medical man should have been called in. If parents were told that a child was certain to die they naturally became careless and hopeless. The jury returned a verdict of "Death from natural causes," adding a rider that Nurse Southwell had exceeded her duties and ought to be censured. The coroner accordingly called her into the room and severely reprimanded her. We do not know what the Maternity Society to which this woman referred may be, but we hope that it is not the Lincolnshire Nursing Association; neither do we believe that any responsible training institution would allow their nurses to act as Nurse Southwell suggested that she had been allowed to do and trained to do. The impropriety of her behaviour passes all bounds, but there is unfortunately no way in which she can be punished.

THE METROPOLITAN ASYLUMS BOARD.

AT the fortnightly meeting of the Board on Jan. 28th a slight decrease in the number of cases under treatment—43—was reported. Of the cases 2690 were scarlet fever, 1323 were diphtheria, one was typhus fever, and 248 were enteric fever. There was not one case of small-pox under treatment. A decrease had occurred in the notifications to the Board of 170, the number being 1650, as against 1820 in the previous fortnight. The leaps

and bounds with which the work of these hospitals is increasing is well brought out in a discussion on a motion to raise the salary of the excellent clerk to the Board, Mr. T. Duncombe Mann, to £1250. The hospitals have increased in the eight years of Mr. Mann's service from eight to 14 in number; the staff from 1300 to 3700. In the eight years preceding Mr. Mann's appointment 35,000 patients were treated; in the succeeding eight years 141,000. This does not show that the infectious diseases of London have increased in amount—though we should like some facts on this head—but that the objection to send them to the hospitals is diminishing and perhaps that the regulations for excluding the unfit are not very strong.

THE PATHOLOGY OF ERYTHROMELALGIA.

IN 1872 Dr. Weir Mitchell described "red neuralgia" or erythromelalgia. A number of theories have been put forward of the pathology of the disease, which is generally regarded as of nervous origin. Lewin and Benda published a paper in the *Berliner Klinische Wochenschrift*, 1894, in which they collected 41 cases. They concluded that erythromelalgia was not a disease but a manifestation of various cerebral and spinal maladies. In THE LANCET of August 13th, 1898, Dr. James Collier published a most important article showing that erythromelalgia occurred in a number of nervous diseases—disseminated sclerosis, tabes, neurasthenia, and myelitis—and that it was not a rare symptom of spinal cord disease. In the *American Journal of Medical Sciences*, January, 1899, Dr. Weir Mitchell and Dr. Spiller have published the following important case, the only one in which microscopical examination of affected parts has been made and peripheral disease of nerves and arteries found. A man, aged sixty-one years, in fair health, began to have limited areas of severe pain in the right foot with tenderness and flushing when the limb hung down. Whilst the fourth and fifth toes were thus affected a small, deep, painful ulcer appeared on the outside of the fourth toe and healed slowly. After three months these toes seemed nearly well and the second and third were furiously attacked. As these improved the great toe was affected. Cold and elevation relieved the pain; heat and depression made it worse; walking was unendurable. The great toe was slightly red but not swollen. The heart was feeble, the arteries were soft, and there was no excess of tension. The circulation in the left leg was good but in the right a pulse could not be felt below the groin. Many remedies were tried in vain. The toe and half the metatarsal bone were amputated. The wound healed slowly with some sloughing. After the operation the patient had pain in the ball of the foot and some reddening of the toes, but he was better. The nerves of the great toe were intensely degenerated and showed scarcely any nerve fibres, consisting almost entirely of connective tissue. The media and intima of good-sized vessels were greatly thickened; in some places the lumen was nearly obliterated. The bones were enlarged. In a case of erythromelalgia of the lower limbs reported by Auerbach the nerves were normal (but it is not certain that the most peripheral parts were examined); the upper sacral and lower lumbar posterior roots which supplied the affected parts were much degenerated. Auerbach found that a patient recovering from multiple neuritis presented deep redness of the legs and feet after they were hung down for a few seconds. Dr. Weir Mitchell held that erythromelalgia may be due to spinal disorder, but more recently he has been inclined to attribute it to neuritis. The preservation of sensation in the great toe in his case is striking; the few scattered undegenerated fibres must have been sufficient for transmission. The writers conclude that in their case the symptoms were due to peripheral neuritis, but inasmuch as such was absent in Auerbach's case it follows that involvement of sensory fibres anywhere between the cord and the periphery, and possibly within the cord, is capable of causing erythromelalgia. But they are unable to say whether the arterio-sclerosis or the neuritis in their case was the primary lesion, as it is exceedingly probable that such disease of the vessels would affect the nerves.

THE NEW BRITISH SERVICE BULLET.

PROFESSOR BRUNS of Tübingen, who had previously investigated the effects of the Dum-Dum bullet, has been recently experimenting with the new British service rifle bullet. He finds, according to a correspondent's report published in the *Standard*, that the new bullet causes severe wounds at short distances, but cannot penetrate strong screens or four or five persons. It may, he thinks, be very effective in wars with savage tribes, but would probably prove less so in European warfare, in which shots are exchanged at 1000 to 1500 metres and the decisive firing is mostly at 500 metres—that is, at a distance at which the distinctive effect of the new bullet does not take place. At short ranges the bullet is easily altered in form, the greatest change in this respect taking place in the case of its being fired into moist and liquid substances. The penetrative effect is diminished, the lateral increased, and this causes a greater destruction of the object hit in proportion to the greater diameter of the bullet. Shots striking soft parts at 25 to 50 metres have a decidedly more severe effect than with other bullets, though not nearly so destructive as those tipped with lead. At the maximum velocity they burst in the muscles and their effect in the hollow organs which are filled with fluids is almost unexampled. Shots through the bones are also more destructive at the above-mentioned distances than those of other bullets and almost as destructive as those that are lead-tipped. The bullet is always broken into small fragments. At distances of 200 to 400 metres also the fractures of bone are decidedly worse than with other bullets though the difference is not so great, whereas at 600 metres there is hardly any difference.

VENTILATION AND SANITATION OF THEATRES AND CHURCHES.

A DISCUSSION on this subject of much moment to the general public has been recently carried on in some of the medical and lay papers of New York City. The starting point of the remarks was a paper read by Mr. William Paul Gerhard, C.E., before the meeting of the American Public Health Association held in Ottawa last September. Mr. Gerhard selected the Hygiene of Theatres as his topic and avers that with the exception of a few recent metropolitan theatres the arrangements for the comfort and health of theatre-goers, of actors, and stage employés are seldom considered, and he arraigns the conduct of places of amusement in the following scathing terms: "It is a well-known fact that there are vast numbers of persons who, while they would thoroughly enjoy a good play, are restrained from visiting such places of amusement for the very good reason that they fear the exposure to the stifling, noxious, overheated atmosphere of the buildings, and who are sure if they do go to awake the next morning with a severe headache or with a cold or sore-throat contracted through exposure to draughts." The whole question of the sanitation of theatres is then entered into in detail. The *New York Medical Record* of Jan. 7th makes Mr. Gerhard's paper the text of a leading article and wholly agrees with his views on the matter. This article says: "The hygienic arrangements of theatres and other places of amusement are all the world over disgracefully neglected. The importance of the thorough sanitation of schools and similar institutions is now fully

realised and no expense or trouble is grudged in carefully looking after the bodily as well as the mental welfare of the young. ..... It is therefore decidedly curious that the greater portion of the adult members of the community exhibit a complete indifference toward matters hygienic in connexion with theatres and music-halls. One reason for their careless disregard of the laws of health is without doubt owing to the fact that a stay in a place of amusement is necessarily brief and that so long as attention is paid to pleasing the eye and ear it appears to be a question of small moment whether the air is healthy or foul. Nevertheless, there are signs that the general public is becoming more alive to the dangers lurking in theatres and establishments of a like nature and it is probable that in the near future the construction of buildings devoted to the pursuit of pleasure will be conducted with a due regard to the health of their patrons." Our American contemporary in the same article criticises the sanitary methods of churches, and particularly of Roman Catholic houses of worship, pointing out that masses are held in them at frequent intervals at which all sorts and conditions of people are present and that at a church, as at a theatre, it is impossible to provide a sufficient allowance of pure air by means of windows or other openings and recommends as the only effective alternative both for churches and places of amusement the mechanical method by propulsion, giving an allowance of about 1800 cubic feet of pure atmosphere per hour for each individual. In the Sunday edition of the *New York Sun* of Jan. 8th a leading article is published dealing with the remarks of the *New York Medical Record* so far as the sanitation of churches is concerned, which, while allowing that overcrowding may occur in Roman Catholic churches, is somewhat sceptical as to the truth of the application to churches of other denominations. In fact, the *New York Sun* asserts that in New York at least it is rather the other way of too small attendance, bringing forward in support of this contention the statement of one of the most renowned preachers of the city, the Rev. Dr. Rainsford, who only recently made the complaint that nowadays instead of attending church the larger number, not only of young men but of family men, take their bicycles or their golf clubs and go to the country. However, whether this be so or not is beside the point. It appears to have been shown without a doubt that in New York and in the United States generally the theatres, concert-halls, and many of the Roman Catholic churches are both overcrowded and ill-ventilated. We have in THE LANCET on more than one occasion drawn attention to the ineffective hygienic arrangements and overcrowding of London places of worship and it may be said that although some of its theatres are satisfactory in these respects yet that many are susceptible of much improvement. We trust nevertheless that no one of them is in such a condition as the theatre in New York alluded to by Mr. Gerhard in his afore-mentioned paper "where each time the curtain rises a strong whiff of sewer air greets the audience." That sanitary reforms alike in theatres, music-halls, and churches would, either in America or Great Britain, be beneficial to the health of their audiences and in the long run, at any rate in the case of places of amusement, satisfactory to the pockets of their proprietors is a truth not to be gainsaid.

SANITATION AT PORTO RICO.

AT Porto Rico, as at Havana and throughout Cuba, the Americans are face to face with sanitary problems fraught with no ordinary complications. At Porto Rico the first difficulty, for instance, is as to how a sanitary authority is to be constituted. General Henry is in command on behalf of the American Government, but he has to establish some form of local self-government. According to the Spanish law every man, however ignorant, would have the right to vote. On the other hand, if the suffrage was restricted to those who could read and write, this would disfranchise 85 per cent. of the population and place local administrative questions in the hands of a privileged minority. General Henry proposes to avoid these two extremes by allowing all who pay taxes and all who can read and write to vote. But, however the authority is constituted, it is certain that the native population is not capable of settling the sanitary problems. The Americans alone possess the necessary experience and knowledge for dealing properly and thoroughly with these matters. At first sight the capital of Porto Rico, San Juan, seems a clean town, for the streets are well paved and swept, but the interior courts and back alleys are filthy. Where the houses have two storeys the first floors, being notoriously more unhealthy, are either let for shops or stores or to poor tenants. The poorer classes are for the most part negroes. The real remedy would be to remove them to the outlying country districts. They crowd the dwellings to a terrible extent. There is no drainage and no proper room for them to wash their clothes. On all sides—in the passages, on the stairs, and in the rooms—damp linen is hung up to dry and pails of foul water in which the clothes have been washed abound. The water used for all purposes is rain-water collected from the roofs and kept in underground cisterns where it is frequently contaminated. There are no public latrines or washhouses in the town. Then the atmosphere is still further poisoned by small portable charcoal stoves which do not communicate with chimneys, but are placed anywhere on the floor and lighted for cooking purposes. On all sides, naked children may be seen playing amid the dirty surroundings. Though the second-floor tenements are healthier they suffer from the foul odours generated on the first-floor. The negro, however, does not object to these conditions and will put up with any inconvenience so as to be able to remain in town. It is quite certain that he will not voluntarily remove to a healthy suburb. Nor will his landlord make the slightest effort to get rid of him. The poorest tenements give the best return on the capital invested, and the owners of such property will energetically resist all attempt at reform. But this obstacle exists everywhere—in Europe as well as in America. There is, however, one favourable circumstance at San Juan—the fall is good and natural drainage could be secured. The Spaniards also have nearly completed an aqueduct to bring pure water from the country. Unfortunately the pipes which they employed will only bear a pressure of 75 lb., whereas for a proper distribution they should be able to resist at least double such a pressure. The water-supply system has therefore to be completed and improved, sewers must be built, and if the first-floor negro tenants are allowed to remain public washhouses must be provided for them where their linen can be washed in a convenient and cleanly manner, and regulations against overcrowding should be strictly enforced by law. Such measures should be welcomed by the inhabitants, but in their present state of ignorance they are more likely to excite opposition than approbation.

THE GENERAL EDUCATION OF THE MEDICAL PRACTITIONER.

A CORRESPONDENT sends us a somewhat discursive communication dealing with a number of subjects, but his remarks upon the position of the general practitioner are sensible. He calls to mind the fact that sundry specialists—notably Professor Edgar—think that the "majority of practitioners know little or nothing of gynæcology ..... and hundreds more (women) lose their lives simply because the diseases which have carried them off are not recognised in time." Not only the gynæcologist has to complain of want of knowledge on the part of the general practitioner but

other consultants and even laymen. Mr. Arthur Chamberlain is reported as saying: "The desire is not to get cheap advice, but for the most part the people I am referring to have been paying a general practitioner for a long time directly or indirectly, through clubs or in other ways, but not having been cured and perhaps not having had their ailments correctly diagnosed they go to the hospital in the hope of getting a definite opinion from the highest medical authority." So far our correspondent. He considers that a great deal too much attention is paid to lectures and not nearly enough to practical work—a contention which is in some ways, we think, justified. As to the conditions under which general practice is carried on he says that the well-to-do patronise the specialist and the hospital physician who "plays the double part of consultant and high-class medical practitioner." The working classes patronise medical aid societies and penny-a-week clubs. No one, thinks our correspondent, should be permitted to accept less than the minimum fees of 2*s.* 6*d.* and 21*s.* He concludes by saying: "It might well be said that the pecuniary interests of the teaching and examining bodies appear to be much safer in the hands of the General Medical Council than are the vital and sanitary interests of the British public." One medical protection association at least has adopted the principle of binding its members to accept no less than a minimum fee, the sum being slightly lower than that mentioned by our correspondent. A monopoly of practice will never be granted to medical men but something will have to be done to make unqualified practice more difficult. It is not illegal, but we do not see why its practitioners should not be made to pay a heavy fine for the privilege of being allowed to treat their patients—i.e., should have to pay a large sum for a licence, renewable every year and revocable without notice, while anyone found practising without a licence should be liable to imprisonment with hard labour on conviction.

"THE PREVENTION OF TUBERCULOUS DISEASE."

DR. ALBERT S. ASHMEAD of New York has a grievance and has written to us at some length on the subject. He says: "I have often had the experience that things which have been observed and studied carefully, and then written about by Americans and published not in one place but in two and even three ..... appear suddenly in some continental journal or society meeting as if an entirely new idea had just originated in the mind of some medical Sir Knight and was now seeing the light of day for the first time in a European paper. Is it not time that it should be understood that the American Union has not only made its appearance as a world power, but also one of the leaders of medical thought?" We quote Dr. Ashmead's own words because we are not quite sure what he means, but we think that his American colleagues will hardly thank him for writing in such a strain. We should like to know what the "American Union" is, for instance, and whom he accuses of plagiarising, and what the unknown has plagiarised. Dr. Ashmead has read in the *Sun* (New York) an account of Sir William Broadbent's remarks at the recent meeting at the Mansion House and Sir Richard Thorne's Harben Lectures. He has also read our leading article of Dec. 3rd, 1898, on the subject of the prevention of tuberculous disease. As an answer apparently to all this he sends us a paper written by himself and published in *Science*, vol. xx., No. 506 (1892), on "The Absence of Cow's Milk from Japan and its Beneficial Consequences." We have carefully read the paper but cannot quite associate its tenets with those held by the English observers already mentioned. He first makes the extraordinary statement that the reason for the absence of rachitism from the Japanese race is because cow's milk is never given to children, they deriving liquid nourishment from their mothers until the age of six years, and then says that tuberculosis is very far from being absent from Japan. He apparently intends to show that he proved in 1892 that milk has nothing to do with tuberculosis, for although milk is never taken in Japan yet tuberculosis exists. Could any argument be weaker? If he had said that milk is not taken and the race is therefore free from intestinal tuberculosis we could understand him, but to make such remarks as we have quoted on such grounds cannot add support to his contentions.

DEATH UNDER CHLOROFORM.

JESSE COOK, aged 38 years, died from the effects of chloroform in the workhouse hospital of Fir Vale, Sheffield, on Dec. 7th, 1898. The man required a slight operation upon one of his knees and for this purpose chloroform was administered from lint by a junior medical officer, one drachm, it is stated, being used. The patient was in the stage of excitement (third degree of narcotism of Snow) when respiration failed. Mr. C. Black, who has courteously supplied us with notes of the case, believed that death was due to "paralysis of the respiratory centre," although the verdict arrived at by the coroner's court was "Death from syncope caused by the administration of chloroform." The two conditions are very different indeed and need the most careful differentiation. As has been pointed out again and again in our columns, the smallness of the dose has little bearing upon the mechanism of the death. It is the rate of evaporation and of absorption of the drug which produces death. In Snow's experiments in one case he gave to a cat a 4 per cent. vapour of chloroform and in 16 minutes respiration ceased although the heart did still beat. In others he gave 10 per cent., using small quantities in each case. In half a minute insensibility was present; in a minute respiration grew difficult and the heart's action became weak; and in between three and four minutes respiration and circulation had ceased. Now, as Snow points out, in the first case when the vapour used was comparatively weak the death occurred gradually. "The breathing was arrested by the influence of the chloroform on the nervous centres, but the heart continued until it was stopped or very nearly so, for want of respiration, as in asphyxia from privation of air." In the other cases "the action of the heart was arrested by the direct effect of the chloroform; in one instance at the same moment as the respiration and in the other even before it." Surely no two modes of death can be more distinct; and their confusion is most disastrous, since in the one instance the patient can practically always be saved if the condition is recognised and artificial respiration is at once applied, while in the other the patient can seldom be brought round. In the Fir Vale case no doubt during struggling the patient's forced breathing led to an increased chloroform vapour tension in the lungs and a fatal overdose was taken.

THE LIVERPOOL SCHOOL OF TROPICAL DISEASES IN CONNEXION WITH UNIVERSITY COLLEGE, LIVERPOOL, AND THE ROYAL SOUTHERN HOSPITAL.

IN a letter dated Nov. 9th, 1898, published in the London papers the Secretary of State for the Colonies pointed out that the Medical School of University College, Liverpool, and others situated in large seaports, possess exceptional facilities for the study of tropical diseases. Stimulated by this and considering the serious character and wide

prevalence of tropical diseases, knowing also the very large number of such cases which find their way to Liverpool owing to the connexion of that city with the trade of West Africa and other tropical countries, and taking into consideration that the Royal Southern Hospital and the newly-opened Thompson-Yates Laboratories of Physiology and Pathology offered every facility for teaching and research, Mr. Alfred L. Jones of Liverpool generously came forward and offered to support the movement for founding a school for tropical diseases in Liverpool by an annual grant of £350, suggesting the formation of a committee to consider the best mode of inaugurating such a scheme. The port of Liverpool offers very great advantages for the investigation of tropical diseases. Some of the largest steamship liners in the country keep up constant communication with Africa, South America, and the East, the intercommunication with West Africa being especially great. The Royal Southern Hospital from its close proximity to the docks has annually treated large numbers of patients suffering from malarial and other tropical affections. In recent times the Government subsidised a number of beds in the hospital for the use of soldiers returned from the Ashanti war. Pending the erection of a new block one floor of the hospital will be set exclusively apart for the study of tropical diseases. This consists of a well-ventilated and well-lighted ward which will contain 20 beds and of an adjacent capacious ward laboratory for the examination of blood, urine, fæces, and other excreta. This laboratory will be furnished with the apparatus applicable to modern clinical research. The Thompson-Yates laboratories are situated within easy reach of the hospital; a full description of them was given in THE LANCET of Oct. 1st and 8th, 1898. There will be a special lectureship in tropical diseases in the new school at a salary of £250 per annum and it is hoped to obtain for the purpose the services of a gentleman who has devoted his life to the study of tropical diseases and who will not be debarred from private practice. Further particulars as to this appointment will be found in our advertisement columns. His lectures will be illustrated by lantern slides, diagrams, and reference to the cases in the tropical diseases ward. There will also be a demonstrator of tropical pathology whose time will be wholly devoted to that subject and who will teach both in the ward laboratory and in the Thompson-Yates laboratory. As many gentlemen who intend to take up the study of tropical diseases will probably come from a distance it is proposed to offer special residential accommodation in the Royal Southern Hospital. The foundation of schools devoted to tropical diseases cannot fail to give a fresh impetus to the study of this important branch of medicine. Medical men before proceeding to the colonies or taking medical charge of ships can in future thus obtain a complete course of instruction in tropical medicine. We are glad to be able to announce that the income of the new school is already £900 a year.

LIQUID HYDROGEN.

ON Jan. 20th Professor Dewar gave a lecture at the Royal Institution upon liquid hydrogen. In the course of his opening remarks he said that he hoped to be able to exhibit some liquid hydrogen in the course of the evening but that he doubted whether he should, for some 10,000 things might happen to prevent it. Pressure and cold were the two agents employed in liquefying hydrogen. The first gas to yield was chlorine, which was obtained as a liquid by Faraday and the pioneers in the reduction of the more refractory gases were Andrews, Graham, Pictet and Cailletet, and Olszewski. At this point of his discourse Professor Dewar received a message from the laboratory. He then remarked, "Just what I expected, the tap through which the liquid hydrogen was running is blocked by a lump of frozen air." This to an audience largely composed of persons other than purely scientific men and women might have been considered somewhat startling, but owing, we suppose, to the genius loci, nobody exhibited more surprise than if Professor Dewar had remarked that an ordinary water-tap was frozen. Proceeding with the account of hydrogen Professor Dewar said that its boiling point was − 240° C., or about 30 degrees of absolute temperature. Its chief use at present was to make high vacuum tubes which it did almost instantaneously by condensing the air into a liquid. With regard to its properties it exhibited a well-marked meniscus, capillarity, no appearance of a metal, and would not conduct electricity. Professor Dewar concluded by expressing a hope that at a future lecture he would be more fortunate and would be able to show some of this newest liquid.

PRESENTATION TO DR. COUPLAND.

ON Jan. 28th a numerous gathering assembled in the large lecture theatre of the Middlesex Hospital Medical School on the occasion of a presentation to Dr. Sidney Coupland on his severing his active connexion with the hospital and medical school in virtue of his appointment as a Commissioner in Lunacy. The presentation consisted of a set of table silver, comprising candlesticks, salt-cellars, salvers, and bowl, all designed in the style of the best period, the bowl bearing the inscription: "To Sidney Coupland, M.D., F.R.C.P., from his colleagues, pupils, and friends at the Middlesex Hospital, 1872–1898;" together with a diamond and sapphire pendant for Mrs. Coupland. Dr. Cayley in making the presentation spoke in eloquent terms of the zeal and unselfishness which Dr. Coupland had always shown to the hospital and school throughout the number of years during which he had been connected with them. Dr. Coupland, speaking with evident emotion, thanked Dr. Cayley and those friends who had interested themselves in the presentation and referred to the devotion he felt towards the hospital and the grief which it caused him to cease his active work on its staff. After the ceremony the visitors had an opportunity of inspecting the new school buildings which had just been completed, the well-equipped and appointed laboratories of which fully bring it up to all the requirements of modern medical study.

HOSPITAL ABUSE AND THE ABUSE OF FRIENDLY SOCIETIES IN AUSTRALIA.

IT is to be gathered from the letters of our special correspondent in Australia that hospitals and friendly societies are liable to the same abuses which call for such loud complaint at home. The expenditure of the Melbourne Hospital under all items increases. Probably but little care is taken to exclude the unfit, for we note that the daily average of cases has increased in two years by 24 and coincidentally the number of operations. A sub-committee of the hospital appointed to investigate this evil and to find a remedy for it has arrived at some remarkable conclusions, one of which seems quite original, and—supposing the patients to be rightly admitted as fit subjects for hospital help—very cruel. Visitors to patients are to be charged sixpence a ticket for admission as if they were visiting an exhibition. This is an ingenious device, but not very creditable to a charitable institution. In-patients as well as out-patients are to be charged a registration fee; the contract system has to be extended to all departments; and students are to be more heavily taxed by paying annual fees as well as entrance fees. The one conspicuously proper remedy for this evil—the exclusion of the unfit—is not even mentioned. We venture to suggest to the authorities the reconsideration of the charge on the really poor for visiting their friends and the establishment of an efficient system for

excluding the unfit. A far larger number of cases of disease can be treated at home than is generally supposed and the indiscriminate admission of people to the out-patient or in-patient department tends to exaggerate the error. The relations between the medical profession and friendly societies have been under discussion at a conference of delegates from the medical societies of the colonies and some resolutions were passed which will be studied at home with interest. It was agreed that the societies should impose a wage limit of £200 per annum upon all their members; that each member of a lodge should pay an annual fee of 10*s.* and a fee of 1*s.* for each consultation and 2*s.* 6*d.* for each visit of the lodge surgeon; and that midwifery, miscarriages, anæsthetics, operations, and cases involving legal proceedings should be extras. From the information already collected by the Medical Defence Union of Australia, at whose instance the conference has been held, it is clear that the abuse of friendly societies by well-to-do people is very prevalent. One suggestion is very good, that a conference should be held between delegates of the medical profession and delegates of the friendly societies. This is the likeliest way of getting any real improvement and until it has failed other measures should be postponed. Public opinion will be much more in sympathy with those seeking the correction of abuses if they are first amicably discussed between the parties most interested. We are glad that the proposal for such a conference has emanated from the medical profession.

HELIOTHERAPY *ALIAS* PHACOTHERAPY.

"IT was in the beginning of the month of September last that I conceived a therapeutic process which seems to me to be new." Such are the opening words of a communication which was made by M. Pierre Apéry of Constantinople to the Société Française d'Hygiène, the occasion being an ordinary meeting of that body on Dec. 9th, 1898. The duration of the gestatory period cannot but strike the professional reader as perilously brief, but it is to be hoped nevertheless that M. Apéry's offspring may not prove to be an abortion after the fashion, alas, of so many other therapeutic novelties. Archimedes, we believe, was the first to make use of burning-glasses, but whereas the Syracusan mathematician employed them for a destructive purpose the Ottoman observer hopes by their instrumentality to put an end to disease. Having offered some rather desultory remarks on the ancient and modern employment of heat in medicine M. Apéry continues as follows: "A goodly number of infectious affections undergo a salutary modification when exposed to the influence of solar light. The micro-organisms which rightly or wrongly are regarded as the factors of diseases, do they not recognise the direct light of the sun as their greatest enemy? It is well known that, among others, the microbe of tuberculosis fades away more readily, and perhaps more rapidly, under the direct action of solar rays than it does through the agency of the so-called antiseptic preparations. These are the considerations which have induced me to present to you to-day a new process for the treatment of a series of disorders that are amenable to light and heat. My method consists in the concentration of solar rays by means of a converging lens and consequently in the formation of an intensely calorific and luminous focus." Among the diseases on which M. Apéry proposes to operate with his burning-glasses are some "reputed incurable," such as cancers, tuberculous ulcerations, &c., and he also is of opinion that the process is peculiarly applicable to the bites of sick or venomous animals. "In fact, wherever the destruction of a parasite is indicated, or that of a noxious microbe together with its secretions and toxins, phacotherapy can be adopted with confidence, the invasion of the tissues by the micro-organisms and the pullulation of the latter therein being in this way effectually prevented." In addition to phacotherapy, which consists essentially in the transmission of solar light and heat through lenses in a concentrated form, M. Apéry also indicates spectrotherapy as a therapeutic medium. The prismatically decomposed rays are sure, he thinks, to prove useful in certain pathological conditions, but as yet he has not been able to investigate the matter sufficiently. Doubtless in a few cases, and especially among travellers and explorers, cauterisation by means of a burning-glass might be employed advantageously, but M. Apéry must not flatter himself that he is the first in this particular field. If he will take the trouble to refer to Pliny he will find a passage to the following effect: "These are balls or globes of crystal or glass which being exposed to the sun transmit a heat sufficient to set fire to cloth or *corrode the dead flesh of those patients who stand in need of caustics.*"

THE PUBLIC HEALTH OF MALTA.

WE have just received the report of the Public Health Department of Malta for the year 1897, compiled by Dr. S. Pisani, chief Government Medical Officer. The estimated population on Jan. 1st, 1897, of the islands of Malta and Gozo was 157,736 and 20,009 respectively. The number of births in the two islands in 1897 was 6019 and the number of deaths was 5547; the birth-rate per 1000 living was therefore 38 and the general death-rate 31·8 per 1000. The death-rate of both islands was 25 2 per 1000 in 1895 and 7·8 per 1000 in 1896, the steady increase being due to an extremely high infant mortality. The disease which is most destructive to infant life in Malta is enteritis. The percentage of deaths under five years to total deaths was for Malta and Gozo 50·6 in 1895, 52·9 in 1896, and 61·3 in 1897. The general list of deaths includes three from smallpox, 189 from measles, three from scarlet fever, 76 from whooping-cough, two from diphtheria, 82 from enteric fever, 53 from dysentery, 62 from remittent fever, 440 from various forms of tubercle, eight from leprosy, 164 from apoplexy, 473 from cardiopathy, 377 from bronchitis, 431 from diarrhœa, and 933 from enteritis. The water-supply has been immensely increased as a result of measures initiated by the Government some years ago. Dr. Pisani, however, considers that the natural resources of the islands cannot provide sufficient water for scavenging and flushing drains, and he therefore recommends that sea-water should be used for these purposes. The report contains no special reference to the health of the garrison or fleet. The highest reading of the maximum thermometer was 97·8° F. in September, and the lowest reading of the minimum thermometer was 39·4° in January. From February to September inclusive rain fell on 40 days, the total amount being 4·641 inches; in the four winter months, namely, October, November, December, and January, rain fell on 50 days, the total amount being 9·575 inches. A great seizure was made of over 500 bags of raw coffee berries coated with a mixture of finely powdered plumbago and lead chromate, so that to the untrained eye they did not differ from the best coffee berries. The bulk of this coffee was imported from Trieste, but some of it was traced to Genoa, to Hamburg, and in one instance to London.

"THE NEED FOR CARE IN THE USE OF QUININE IN MALARIAL HÆMATURIA."

TO the *New York Medical Record* of Jan. 7th Dr. H. A. Hare, Professor of Therapeutics in the Jefferson Medical College of Philadelphia, contributes a sensible paper on the above subject as a friendly criticism of a special article by an anonymous writer in the *Medical News*. Dr. Hare's object is in no way to disparage quinine or to deny its immense usefulness in malarial disease, but to enter a protest against its indiscriminate use and to show that

the caution which Koch has lately given with reference to its use in malarial hæmaturia is well justified and had indeed been given before by many writers in America and especially by physicians in the Southern States. As long ago as 1892 Dr. Hare investigated the views of physicians in those parts of the United States where the mortality from malaria is greatest and reported the results to the Association of American Physicians. He thought himself "justified in stating that quinine is often useless and harmful in the bloody urine of malarial infection, although circumstances might exist in which the drug might be used." He did not go so far as to deny that in some cases of hæmoglobinuria the frequency of the paroxysms might be such as to make the administration of quinine necessary, the kidneys being flushed out by diuretics such as the vegetable salts of potassium. Here the quinine is given because the danger of the continued attacks is greater than that of renal involvement from the drug. He says that everyone admits that malarial poisoning does cause nephritis. A committee of the Tri-State Society of Alabama, Tennessee, and Mississippi found nephritis in all cases of fatal malarial hæmaturia; so did Ralfe. Kiener and Kelsch have found glomerulitis. He further shows that according to writers of experience quinine in full doses has similar effects, producing renal congestion and inflammation. He instances several cases of hæmaturia from its use. The general result of Dr. Hare's paper is to show that quinine is to be used "with brains" if the best results are to be attained and that its routine use in blissful ignorance of its dangers ought not to be advocated, while, on the other hand, no one for a moment would cast discredit on a truly specific remedy.

WORKMEN'S COMPENSATION ACT.

THIS Act has only been a little more than six months in operation, yet statistics show that the number of fatal accidents in industrial employments brought forward for compensation in that time have increased by 12½ per cent. and of non-fatal accidents 43 per cent. Numerous difficulties have arisen, notably in those cases in which a man who has been the victim of some chronic disease meets with an accident and dies shortly afterwards; was death due to the disease or the accident? A case of this kind was recently before Judge Meynell at the Sunderland county court. A shipwright named John Cairns while working for Messrs. John Blumer and Co., shipbuilders, of Monkwearmouth, while in a stooping position received on the right loin a blow from a hammer which fell from a staging above. He was at once removed to the hospital but never recovered sufficiently to be discharged. About the sixteenth day after his admission his condition underwent a change for the worse and he died exactly a month after the casualty. His dependents claimed compensation for his loss. The claim, however, was disputed on the ground that death was due to disease and not to the accident. There seems no doubt that at the time of the mischance the man was not in sound health. Several medical men were called on both sides, those for the plaintiffs maintaining that although kidney disease might have been present, yet the blow was responsible for the disease proving fatal, whilst the expert witnesses for the defence alleged that death was attributable to "pneumonia due to chronic disease of the kidneys." Such cases offer a formidable demonstration of the fertility of the field for expensive litigation afforded by the Act. Numerous instances of a similar kind can be imagined: a man suffering from chronic bronchitis and emphysema breaks a rib and dies; a man suffering from chronic pulmonary tuberculosis shortly after lifting a weight has a fatal attack of hæmoptysis, and so forth. From this point of view the Act is likely to be disastrous to men who depend for their livelihood on their employment and who are the victims of some chronic disease which in itself may not threaten life for a considerable period but who are capable of doing a very fair amount of work. For if several cases of the kind just quoted are brought into the courts the masters will be obliged to protect themselves with the result that medical certificates will be required by them from the men certifying that the latter are perfectly healthy and not the subjects of any form of disease. It is to be hoped that efforts which are now being made to induce the legislature to modify the Act will be successful.

THE REFLEX MECHANISM OF THE BLADDER.

THE researches of various experimenters have established the fact that the expulsive efforts of the bladder can be excited by stimulation of sensory nerves, so that, as von Zeissl has shown, contraction of the bladder can be induced not only directly by stimulation of the nervus erigens but also in a reflex manner by stimulation of the sciatic nerve. The evacuation of the contents of the bladder is not, however, quite so simple as it at first sight appears to be, and it is now generally admitted that two distinct factors are in operation—a motor influence which causes contraction of the bladder and increased pressure on its contents, and an inhibitory influence which causes relaxation of the sphincter vesicæ and permits the fluid to escape. As a rule the two events occur simultaneously or nearly so—the detrusor urinæ represented by the body of the bladder contracting and the sphincter vesicæ situated at the neck of the bladder relaxing; but it is a matter of common experience that the two actions may not work harmoniously. The detrusor may contract vigorously yet no urine may be discharged because the sphincter does not relax and on the contrary the detrusor may remain flaccid and yet the urine may escape because the sphincter relaxes. The subject has been taken up by Dr. Alfons Hanc whose observations were made in Professor von Basch's laboratory and are recorded in the tenth number of Vol. LXXIII. of Pflüger's *Archiv*. Dr. Hanc proposed to himself to study and analyse with greater precision than has hitherto been practised the motor phenomena of the reflex act and the influence exerted upon it by different poisons. With this object in view he injected a definite quantity of fluid into the bladder previously emptied of its contents and then applied an electric stimulus of uniform strength to the sciatic nerve. The animal which was the subject of the experiment was placed under the influence of curara to prevent the disturbing influence of muscular movements. In addition, in each experiment the commencement of the action of the detrusor was determined by the rise of a manometer one limb of which was inserted into the bladder and the commencement of the relaxation of the sphincter was determined by the quantity of fluid discharged in a unit of time. The latent period of the two muscles proved to be very different. The latent period of the detrusor—that is to say, the reflex time which elapsed between the application of the stimulus and the rise of pressure of the fluid in the bladder—is itself not always the same. In general it amounts to about one second but in some instances it is as much as two or even four seconds. The latent period of the sphincter is almost always greater than that of the detrusor and there does not appear to be any direct relation between the two, the interval varying from 1·03 to 5—that is to say, the postponement of the discharge of urine after commencing contraction of the detrusor is very variable. In not a few instances the sphincter opened or relaxed more quickly with low pressure in the bladder than with high, which clearly proves that the discharge of fluid from the bladder is independent of the amount of pressure in the bladder. On experimenting with various poisons he found that after injection of morphia in the course of a quarter of an hour the reflex expulsive action of the

detrusor was preserved whilst the depressor or relaxing action on the sphincter was lost. The blood-pressure remained unaltered. Similar results were obtained with chloral hydrate. After the ingestion of five grammes of a 10 per cent. solution of chloral hydrate the sphincter reflex was abolished whilst the detrusor reflex, slightly weakened, was preserved and the blood-pressure was sustained. Atropine weakened the reflex action of both the detrusor and the sphincter, hence with some increase in the manometric column showing the pressure exerted by the detrusor on the contents of the bladder there was a diminution in the discharge owing to inadequate relaxation of the sphincters. These three poisons belong to the group which rather depress than excite the nerve centres. The next poison with which Dr. Hanc experimented was strychnia which strongly stimulates the nerve centres and the effects of which he thought were of special importance to determine since it is so often administered in cases of disease of the bladder. He found that sometimes it causes an increase of the reflex action both of the detrusor as manifested by increase of intravesical pressure and also of the sphincter manifested by increased outflow, the former action being more marked than the latter. In other instances it abolished the reflex on the sphincter completely whilst that on the detrusor was maintained, and in still another case the sphincter dilated without previous contraction of the detrusor though this latter action followed some time subsequently. The effects of muscarin and of nicotin are complicated, for muscarin acts so to speak spontaneously—that is, without reflex stimulation—and it acts in this way both on the detrusor and on the sphincter and we must refer to the original article for the further details of its action. He considers that it certainly supports the view of the independency of the action of the detrusor and of the sphincter. The phenomena observed in animals under the influence of nicotin lead to the same conclusion. The whole results of his experiments tend very clearly to prove the distinctness of the motor and inhibitory centres which control the act of micturition.

"LIFE IN A FRENCH COD-FISHING FLEET."

IN a long and exhaustive article on the above subject which occupies more than half of the entire space in the *Archives de Médecine Navale* for November and December, 1898, Dr. L. Chastang, who is a naval surgeon of the first class, gives the following picture of life in a French cod-fishing fleet. "Over and over again," he exclaims in his exordium, "has the miserable existence led by these hapless beings been made public during the last 40 years, but were the writers to be now called upon to report afresh all that they would have to do would be to copy their original reports. In this profession there is no such thing as progress." The vessels are strong and speedy, but everything is sacrificed to the cargo, the crew being overcrowded to the last degree. The filth is simply indescribable. The men never take off their clothes and seldom even remove their immense boots when they turn in. Washing is unknown. Putrescent refuse is habitually thrown under foot. As there are no sanitary appliances of any description the calls of Nature are obeyed in every corner, not only on deck but below in the sleeping place. The sleeping berths are fearful holes, absolutely unventilated. Everywhere filthiness is pushed to its maximum. "Side by side with alcoholism," continues the author, "filthiness is the chief vice of the French sailor; at once the most profound, the deepest rooted, and the most hideous ..... to appreciate this properly he must be seen and smelt. The observer who has only visited vessels of a similar character but flying flags different from ours could form no idea of it, nor would he see anything approaching it." Fortunately the men spend most of their time in the open air. They work on an average 18 hours out of the 24, and that without a day off from first to last, even on Sundays, throughout the whole of the five or six months during which the fishing lasts. In the matter of food there is apparently little cause of complaint, although Dr. Chastang seems to think that the men are induced to put up with indifferent eatables by a more than liberal allowance of strong drink. In addition to wine, of which a large ration is served out daily, each man receives several drams of so-called brandy. In reality it is corn-spirit of the cheapest quality. Living under such extremely insanitary conditions it is a remarkable fact that there is little or no sickness of an acute description among the cod-fishers. Rheumatism and neuralgia are chiefly complained of, but cases of typhoid fever are also comparatively frequent. There can be no doubt, however, but that every one engaged in the industry grows old before his time. Men of 40 years of age have the appearance of men of 70 years and it is a pregnant fact that State pensions to North Sea fishermen are few and far between. Although they invariably commence as youths they have nearly all died off before the completion of their 25 years' service entitling them to a pension. Badly as our merchant sailors may think themselves treated we venture to think that from a hygienic and moral point of view no British shipowner can be compared with the *armateurs* who control the lives and fortunes of French fishermen.

THE PAY OF COLLIERY SURGEONS.

IN our issue of Nov. 12th, 1898, we mentioned that a movement had been started among colliery surgeons and other practitioners undertaking duties by contract in the county of Durham to obtain better pay. On Dec. 8th, 1898, a meeting was held at Durham to consider the matter. The practitioners in the county had previously been notified by circular of the meeting and the motions to be submitted to the meeting had been forwarded to them. As a result 70 practitioners attended the meeting, while 300 sent in their adhesion to the motions. These, which were carried unanimously, were as follows: first, that an association of practitioners in the county of Durham and the neighbourhood should be formed to protect the interests of the profession, to be called the County of Durham Medical Union; and, secondly, that the rate of remuneration to be paid by an adult workman per fortnight should be 9*d*., instead of as at present 6*d*. The reasons given for this increase were set out in our issue of Nov. 12th, 1898. Some of those present at the meeting expressed a fear that the result of the resolutions would be to swamp the county with new medical men who would contract at the old rates. We hope for the honour of the profession that this will not be the case, and we do not think that it will be, for since the action of the General Medical Council in putting down unqualified assistants the supply of medical men is not so much in excess of the demand. As an instance of this we know that when one firm of practitioners advertised some five years ago for an assistant they received 50 applications. On advertising this year they only received four or five—a fact which presumably shows that the supply of unemployed qualified men is much lessened.

VOMITING IN INFANCY.

DR. G. VARIOT contributes to the *Journal de Clinique et de Thérapeutique Infantiles* of Dec. 22nd, 1898, and Jan. 5th, 1899, some excellent observations on the causes and prevention of vomiting in infancy. The subject is discussed more particularly in its relation to diet and it is divided for convenience into two sections—(1) vomiting in breast-fed infants; (2) vomiting in artificially-fed infants. The following causes are comprised under the first head: a probably

toxic action in the milk of weakly mothers, the furtive introduction of other food than breast milk, drugs taken by mothers, the influence of emotion on the breast milk, and (?) an excess of casein in the milk. This last-named factor in the process has been made much of by American practitioners. Dr. Variot thinks too much importance has been attached to it and he strongly condemns the "milk laboratories" by which it is sought to remedy the supposed incapacity of nature as a milk producer. He has one method which he relies upon as a corrective of her temporary errors—namely, the regulated use of sterilised cow's milk. This he does not resort to until a methodical use of the maternal breast under as favourable conditions as are obtainable has failed. We now come to the second head. In the feeding of children brought up by hand the quantity of milk taken during a given time is, Dr. Variot reminds us, of only less importance than its quality. He quotes the researches of Snitkin, Fleischmann, Morgan Rotch, and others in proof of the rapid physiological development of the infant stomach which, beginning with a food capacity equal to 30 grammes at birth, rises to that of 90 grammes from the sixth to the eighth week of life. Nevertheless, as he remarks, its capacity is still limited and a milk-supply of from 60 to 80 grammes is more suitable than the gluttonous dose of 125 grammes which is not an uncommon cause of overdistension and consequent rejection of milk. He advises as the best mode of treatment in such cases a reduction in the amount of milk taken and an extension of the intervals between the meals. In a case of obstinate vomiting quoted by him this plan was adhered to in spite of some temporary loss of weight with almost immediate and lasting benefit and ultimately with much improved nutrition. In this connexion we may again direct attention to Dr. Comby's interesting observations on Dilatation of the Stomach in Infancy, quoted in THE LANCET of July 24th, 1897. Dr. Variot is an undoubting advocate of sterilised milk for hand-fed infants and is fortified in this position by an experience of 500 cases thus nourished at the Belleville Dispensary. He records the interesting fact that the milk is taken undiluted in many instances even by infants a few weeks old and does not disagree. In others a weaker digestion entails necessary dilution by adding a third part of boiled water. The quantity must in like manner be regulated not by mere age, but rather by the body weight and relative robustness of the child, an atrophic infant four months old requiring from 75 to 90 grammes each time when fed, and a healthy child of the same age from 120 to 135 grammes.

THE CAMBRIDGE UNIVERSITY ASSOCIATION.

A WELL-ATTENDED meeting was held on Tuesday afternoon last at Devonshire House on the invitation of the Duke of Devonshire, Chancellor of the University of Cambridge, to consider the pecuniary position of the University. The Cambridge University Association was formed some two years ago to enlarge the resources of the University for educational work by creating an endowment fund, and the meeting over which the Duke of Devonshire presided may be looked upon as its inaugural one. His Grace made an excellent speech advocating the foundation of the Association as a bond between old and new members of the University and gave practical proof of his sentiments by contributing £10,000 towards the endowment fund. The Vice-Chancellor of the University (Dr. Alexander Hill, M.D. Cantab., Master of Downing) proposed and Professor Jebb, M.P., the representative of the University in Parliament, seconded a resolution approving the establishment of the Association; the Master of Trinity (Dr. Butler), Sir Richard Webster, Professor Clifford Allbutt, M.D., and Professor Ewing, spoke forcibly in its support, and it was carried unanimously. An executive committee was then elected. The Duke of Devonshire announced that the firm of Lord Rothschild would contribute £10,000 to the Association and that the Drapers' Company had intimated their intention of contributing for ten years £800 a year in support of a Professorship of Agriculture. A cordial vote of thanks to the Duke of Devonshire for his services was unanimously accorded and in this auspicious way the work of the Cambridge University Association has been inaugurated. Remembering the position which the University has achieved for itself in the paths of science and without any consideration of its claims as a splendid institution of unsullied history, all medical men must wish this successful start to be followed up rapidly.

AN ELOQUENT TRIBUTE.

THE following lines appeared recently in the *Westminster Gazette*. They constitute as eloquent a tribute to the virtues of the medical life as we have ever read:—

TO A CERTAIN DOCTOR.

"I'm only a doctor," is your cry,
"Concerned with the body's ills and maims,
But witless of art and poesy,
And lost to the spirit's finer aims."

Ay, only a hand by hundreds blest,
A heart that has ached for all, save self,
A brain racked ever to find them rest,
A soul whose riches are scorn of pelf.

In vain we argue; the theme is old:
Some men love horses, some singing-birds
But e'en if the poet's song ring gold,
Shall deeds that are gold weigh less than words?

You waived the pleasure and wooed the strife,
Of thorns, not roses, have made your bed;
You longed for the lovely side of life,
And fought with the terrible instead—

Longed sore, but never had time to give,
"Till now it is all too late," you say.
So be it. Why, man, the life you live
Is one long poem from day to day.

JAMES RHOADES.

We trust to hear more and frequently from Mr. Jame Rhoades.

MR. E. CLIMSON GREENWOOD has been appointed teacher of vaccination to the Medical School of St. George's Hospital. Under the provisions of the Vaccination Act the teaching of vaccination at vaccination stations necessarily comes to an end. Under the arrangements now made at the St. George's school the teacher of vaccination will give a short course of lectures in the school and will make arrangements for the students attending the lectures to accompany him during domiciliary visits. One advantage may b expected from the new conditions—viz., that the student will be able to watch the progress of the vaccine vesicle to a later stage than was the case under the old system.

THE annual general meeting of the Hunterian Society will be held on Feb. 8th, at 8 P.M., at the London Institution, Finsbury-circus. At 8.30 P.M. the annual oration will be delivered by Sir Hugh Beevor, Bart., M.D. Lond., on "The Declension of Phthisis." Members of the medical profession are invited to attend. The annual dinner will be held at the Café Monico on Friday, Feb. 10th, at 7 P.M.

DR. F. J. WALDO, medical officer of health of the Temple and Southwark, has been appointed Milroy Lecturer by the Royal College of Physicians of London for the year 1900. The subject of the lectures will be: Summer Diarrhœa with Special Relation to Causation and Prevention.

BRISTOL INFECTIOUS DISEASES HOSPITAL.—At a meeting of the Bristol Sanitary Authority held on Jan. 17th it was decided to recommend the Town Council to appoint Dr. D. S. Davies (the medical officer of health) medical superintendent of the new infectious diseases hospital at a salary of £50 per annum for the first year and £100 afterwards.

QUACKS AND ABORTION:
A CRITICAL AND ANALYTICAL INQUIRY.

VI.[1]

WE have spoken hitherto of the nature of this trade, we have given our views upon the subject and set out the materials upon which those views are based, and we have also expressed an opinion that the advertisements of the trade are likely to appear less frequently in the immediate future, at any rate in those papers which value their reputation. We have shown by the case of the Irristum Company that no newspaper is bound to insert advertisements if, even after making a definite contract to do so, it finds that in fact they are of such a nature as those of the company in question. We have, however, said nothing of the question of the liability of the newspapers to prosecution for inserting such advertisements. It was stated by Mr. Muir at the police-court, before the Chrimes brothers were committed for trial, that steps would in future be taken against newspapers which lent themselves to the advertising of abortifacients. A presentment recommending such a course has been made by the jury in the Chrimes case and Mr. Justice Hawkins's last act as a judge was presumably the forwarding of this recommendation to the proper quarter after the trial was concluded. Mr. Muir presumably represented the City Police alone, while the Home Office or the Treasury, or whatever office may have initiative power in such matters, has viewed the advertisements to which we have called attention in detail, and scores of others as bad, for long with indifference. At the same time it is possible that steps to prosecute may now be taken. If they are not there is considerable likelihood of things very soon relapsing into their former condition. We said when we commenced our articles that the advertisements were less common than they had been in October; at the same time we find exactly as we predicted that they have not really ceased. The long columns of puffery, innuendo, and dirt appear temporarily to be without a journalistic lodging; but a line or two has made an appearance in several provincial prints since the exposures which shows that the evil is not dead, but only sleeping. This makes us sure that when once the popular outcry against them has been hushed the less scrupulous proprietors or managers will again yield to temptation unless care is taken to see that they do not prostitute their advertisement columns in this way.

With regard, however, to the precise legal position. Those who publish that which is obscene can undoubtedly be indicted for so doing and the test of obscenity was laid down by Lord Chief Justice Cockburn in 1868 in an appeal by a person of respectable position who from motives of Protestant propagandism disseminated copies of "The Confessional Unmasked." That test is "whether the tendency of the matter charged as obscenity is to deprave and corrupt those whose minds are open to such immoral influences and into whose hands a publication of this sort may fall." Even if the ultimate object in view is to do good it will not avail him who publishes in such circumstances and no one can say that there is such an object in the advertising of the specifics we have analysed. It seems, however, likely that owing to their not being on the face of them indecent they have never been treated as obscene libels by the police or anyone else. The veil of pretended cures for amenorrhœa has protected them. It is, however, possible that the prosecution, if undertaken, would be for inciting, being accessories before the fact, to the criminal acts of which individual advertisers may be guilty as principals—a far more serious charge—or for inciting to commit a felony. If any such proceedings were made retrospective by being taken against those papers publishing such advertisements before the case of the Chrimes brothers threw lurid light on the subject the courts would be fully occupied for some time to come, while the "Irristum" case referred to already would make it a little difficult for some of the accused to plead ignorance of the nature of the advertisements in defence.

There is one more point arising out of the legal aspect of the case to which we call attention. From all, or nearly all, newspapers advertisements such as those of Thomas Ottey and "Professor" Leslie have, for the time at any rate, disappeared. We notice, however, that there still are published in them a number of notices which come within the definition of indecent advertisements given by a recent Act of Parliament known as the Indecent Advertisements Act, 1889. It is a statute which is not quite so comprehensive as its title would imply, for it only prescribes penalties for the affixing of indecent advertisements in public places, the distributing then as handbills and other similar methods of making them public, while it has been held not to apply to newspapers. We quote the 5th Section of this Act: "Any advertisement relating to syphilis, gonorrhœa, nervous debility, or other complaint or infirmity arising from, or relating to, sexual intercourse shall be deemed to be printed or written matter of an indecent nature within the meaning of Section 3 of this Act,[2] if such advertisement is affixed to or inscribed on any house, building, wall, hoarding, gate, fence, pillar, post, board, tree, or other thing whatsoever so as to be visible to a person being in, or passing along, any street, public highway, or footpath, or is affixed to, or inscribed on, any public urinal, or is delivered, or attempted to be delivered, to any person being in, or passing along, any street, public highway, or footpath." The advertisements described in this section are precisely those which, we have said, are still published in those papers which have given up advertising abortifacients and we have two observations to make with regard to this. Firstly, we submit that no proprietor of a public newspaper with any sense of propriety or with any self-respect would allow in his paper matter which is by law declared to be indecent and punishable as such if found in a public latrine. Secondly, we wish to point out that those who pay for the insertion of these advertisements are not only of the same class, but are in many instances the same persons as those who sell pretended abortifacients in the guise of emmenagogues. These advertisements are therefore likely to become a means of bringing the abortionist into contact with his clients, for, as we have shown, when a quack sends his medicine to those who order it, he always sends a sheaf of advertisements of all the other articles and concoctions of a kindred nature which form his stock-in-trade. It may also be observed that although the section quoted only says that the advertisements it refers to shall be deemed indecent on a gate-post or urinal, or in other certain circumstances, it by no means follows that such advertisements, if flagrantly plain-spoken or unusually suggestive, may not be found by a jury to be indecent when appearing in a newspaper, and therefore to those whose sense of decency is not fine enough to lead them to exclude such stuff we suggest that there may be danger in it of legal penalties. We shall watch with interest during the next few months the columns of newspapers which have derived profit hitherto from the advertisements of pretended abortifacients, aphrodisiacs, and remedies for venereal disease. We are inclined to believe that the improvement now observable will be but short-lived unless the police in London and in the country show less indifference than heretofore.

With regard to the results of the examination in our laboratory of the potions and pills advertised by the different quacks it will be observed that, despite the fact that no definite line of action or scheme of analysis can be laid down for the identification of vegetable extracts or substances by chemical tests, we have been able nevertheless to state—and state for practical purposes exhaustively—the nature of the contents of both orders of nostrum. We hope to deal shortly with the question of the limitations of chemical analysis in this connexion—i.e., in its application to the identification of drugs in medicines, pills, and potions. We now wish to record that, so far as successful identification has been achieved in the series of articles which we are concluding, it has been due largely to tests of comparison instituted with reference to known specimens which were most kindly placed at our disposal by Messrs. Burroughs, Wellcome, and Co. We cordially tender our thanks to these gentlemen. Some of the preparations, known specimens of which we were compelled to have at our disposal, do not occur in the ordinary stock of manufacturing chemists, but in spite of this Messrs. Burroughs, Wellcome and Co. were good enough to procure them—an act of courtesy which has very materially assisted our laboratory staff in the work of unravelling the secrets of the abortion-monger.

[1] Articles I., II., III., IV., and V. were published in THE LANCET of Dec. 10th, 17th, 24th, and 31st, 1898, and Jan. 21st, 1899, respectively.

[2] The section which prescribes the penalty.

THE JUST POSITION OF BACTERIOLOGY.

BY THE LATE CHARLES EGERTON FITZ-GERALD, M.D. ST. AND.

[WE have received the following paper from Mr. Desmond Fitz-Gerald, the son of the late Dr. Fitz-Gerald of Folkestone. Possibly the risks pointed out are not so great as Dr. Fitz-Gerald imagined, but the warning given by him is not altogether unnecessary.]

Is it not almost time that some protest were made against the all-absorbing importance now so generally attached to bacteriology—to what has so happily been styled by Dr. Goodhart "the bacteriological boom"? I would not have it for a moment supposed that I wish to depreciate the immense service that bacteriology has rendered to medical, surgical, and clinical science. That bacteriology has effected immense good in the investigation and treatment of disease no one who has followed the teaching and labours of Pasteur and of Lister would be disposed to deny; but surely it is not the "be all and end all" of the science and art of medicine and surgery, nor should it be allowed to replace, as it now appears to, the patient and careful clinical observation formerly relied on. The feverish search for the particular microbe associated with each disease is quite at variance with the calm and philosophical study of symptoms, personality, and environments which should be the prime object of the scientific physician. The patient and laborious endeavour to identify some eluding bacillus is no doubt worthy of all praise for those who have the leisure and eyesight for such researches; but after all it does not evoke the higher qualities of the "wise physician," nor should it be his whole end and aim in the investigation of the hidden causes of disease. And yet the diligent and profound seeker after the real but obscure *fons et origo* of a disease is rather looked down upon nowadays by every expert, if only armed with a microscope and some aniline dye, especially if, in addition, he be the proud discoverer of some new microbe. The thoughtful and conscientious practitioner hanging anxiously over some dangerous and obscure case in which a wrong diagnosis may spell death to his patient has to solve a far more difficult problem than the pure scientist with his microscope and culture plates. The one is a physiological problem involving deepest thought and logical deduction, the other only a mechanical research requiring patience, manipulative skill, and some practice. What, for example, could be more absurd than to assert, as is constantly done, that a case which presents clinically all the well-known symptoms of diphtheria is yet not that disease unless the Klebs-Löffler bacillus can be microscopically detected? or, on the other hand, to assert that a case of benign sore-throat or tonsillitis is certainly diphtheria and is to be so notified if the said bacilli should be found in the secretions, quite ignoring the well-known fact that the Klebs-Löffler bacilli can often be detected in perfectly healthy mouths and fauces? How often does one not read in the journals of some diseases that "the bacillus has not yet been identified," as though no research other than bacteriological could possibly be necessary? By all means continue to search for and identify every bacillus invariably associated with each diseased condition, for such researches may be invaluable in identifying particular maladies, but let us not shut our eyes obstinately to all clinical teaching.

When we hear of occupation palsy being due to neuropathic organisms and only partially influenced by occupation the situation reaches an anti-climax. As well maintain that the specific rash of measles or scarlatina was the *cause* rather than the *result* of the disease. It has been aptly said, "No self-respecting disease would now venture to assert itself, far less to claim a specific name, were it not possessed of a respectable micro-organism." "*Cherchez le microbe*" is now the fashionable cry (and there is a deal of fashion in physic), and I have no word to say against such search if only it does not preclude other more philosophical and therefore more difficult methods. The whole history of the tubercle bacillus ought to have taught us caution. It is only after the tubercles have formed, matured, and broken that bacilli are discovered in the sputum; they are often not seen for months or even years—in fact, not until the soil and conditions are favourable for growth. You may scatter seeds on the pavement and they do not grow, but plant them on warm, damp soil and they germinate at once. So with the tubercle bacilli. Prepare the lungs by catarrh, inflammation, &c., and they grow luxuriantly. Bacteria, like all parasites, tend to multiply as the normal power of resistance in the system is impaired and vitality decreases, just as the aged or decaying tree is attacked by parasitic growths as its vigour fails. That specific micro-organisms (germs, parasites, microbes) are intimately and invariably associated with certain diseases is indisputable, that they or their products (toxins) will reproduce the same disease—in other words will "breed true"—is equally undeniable, but that they are the original primal cause is a very different matter. It may be a good working theory but it is "not proven," and at any rate it is one which should be received with limitations. The veteran Virchow, in his address to the medical school at the Charing-cross Hospital, referred to the "erroneousness of the theory which attributes every impurity to bacteria on the sole ground of its contagiousness. Some of the most important contagious diseases have succeeded in resisting the struggle to find in them a parasitic contagion. For example, many have been the sanguine hopes of finding the parasite of syphilis and as many have been the failures; the coccus of gonorrhœa alone has been discovered. It was expected with certainty that a parasite was the causal agent of variola; more than one was found but none pathogenic. In hydrophobia all appearance seemed to promise that it would prove to be a micro-parasitic disease. Its contagion is undoubted; the vaccine has been prepared and yet no one has been able to cultivate a specific bacillus. The same may be said of some other specific diseases. Perhaps the pathogenic bacteria will be found but as long as they are not discovered all assumption is useless if not dangerous. To have learned this is to have made a mighty stride in the biology of disease."

It will be admitted that men of his eminence, age, and scientific attainments are far better able to calmly review and dispassionately judge of the value of new discoveries and researches than the pure scientist who with some self-complacency may choose to dub such views "old-fashioned." We must bear in mind that bacteriology is in its infancy, and though it opens up vistas like an astronomer's glimpse into infinity of almost unimaginable possibilities and undreamt-of worlds, still the *rôle* of micro-organisms in disease has yet to be determined, and should be investigated in a philosophical spirit and not accepted as wholly without question. Let me re-iterate: I am not ignoring or depreciating the enormous, the brilliant services which bacteriology has rendered to science: I am merely pleading for a more rational view, a dispassionate judgment, a calm, judicial attitude, relegating it to its proper sphere as the handmaid, not the master and leader, of science, always remembering that its seductive brilliance should not blind us to other and more prosaic aspects of disease.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE forty-sixth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Jan. 24th. The Commissioners present were the Chairman (Lord Llandaff), the Right. Hon. John W. Mellor, Sir John Dorington, Mr. Alfred de Bock Porter, Mr. Cripps, Q.C., Mr. Robert Lewis, and Major-General Scott. At this sitting the examination of Mr. Bowles was concluded, and Mr. Searle, the secretary, and Mr. Joseph Francis, one of the engineers, of the New River Company, were examined. Statements as to the legal position and present state of the New River Company were put in. A table showing the charges made by various water companies in the county of Middlesex was also put in. From this table it appears that the amount charged by the various companies and local authorities differs very greatly, and in practically every case the charges made by the smaller companies in the county of Middlesex and by the local authorities are higher than the statutory charges of the metropolitan water companies. For example, the charge made by the New River Company and Grand Junction Company for an £18 house is 14*s.* 5*d.*; by the West Middlesex (after allowing rebate of 10 per cent.) it is 12*s.* 11*d.*; the charge of the East London Company is 18*s.* In the case of Uxbridge the

District Council charge £1 4*s*., Tottenham District Council £1 19*s*., Rickmansworth and Uxbridge Valley £1 1*s*. 7*d*., and Colne Valley £1 10*s*. 10*d*. The only charge which is lower than those of the metropolitan water companies is made by the District Council of Enfield and amounts to 12*s*. a year.

Mr. HENRY CARRINGTON BOWLES was cross-examined by Lord ROBERT CECIL on behalf of the Hertfordshire County Council. He said that originally the New River was supplied from the Chadwell and Amwell springs and that he did not know when water was first taken from the Lee. He did not think that it would be an advantage to the public to know the results of the soundings of their wells. He did not think that the public would gain any information by knowing the ups and downs of their wells, but if Parliament insisted that the information should be given "they could not object to it."

Mr. MELLOR asked the witness why there ought to be any secrecy in such a matter and the witness replied that as long as the company was carrying on its business it was better that they should keep the facts to themselves. He did not think the public had any interest in the matter as long as they were supplied with sufficient water.

The CHAIRMAN said that owners of wells had something to say to it.

Lord ROBERT CECIL, on behalf of the Hertfordshire County Council, called the attention of the witness to an application which had been made in the autumn of last year that a gauge should be fixed at Chadwell spring so that the effect of drought could be recorded. The witness said that he objected to information being given because it might be misleading to the public; the public would be misled because they would not understand it. The directors consulted the engineers on the subject and they thought that it would be misleading.

Mr. MELLOR asked the witness whether he considered the New River Company to be a private company and suggested that it was a public company. The witness said that he did not know the difference.

Mr. MELLOR said that he understood that when giving evidence before Lord Balfour's Commission the witness had said that the matter was no business really of anybody else but their own business, and he asked the witness whether he suggested that the public are not entitled to know everything connected with the springs. The witness replied that he doubted whether they had any right to know.

Lord ROBERT CECIL wished the Commissioners to understand that they did not desire to lead the company into a trap, but they wanted the information for which he had asked.

The CHAIRMAN said that the questions which Lord Robert Cecil had put were perfectly fair.

Practically no information was elicited.

Mr. SEARLE, secretary of the New River Company, put in some tables which showed the financial position of the company and gave in detail an account of the property which they owned.

Mr. JOSEPH FRANCIS, in answer to the CHAIRMAN, said that they were able to give to their customers a supply of from 28,000,000 to 30,000,000 gallons a day. During last year the amount distributed rose to 29,000,000 gallons a day. It had happened that during frost the amount of water delivered had increased to the extent of 8,000,000 or 10,000,000 gallons a day. The witness thought that in the year 1937 they would require a supply of 63,000,000 gallons with an addition of 25 per cent. for possible contingencies. The increase was due to two reasons: first, the larger supply per head daily which was required; and, secondly, that the population would in his opinion increase more rapidly than had been previously calculated. The company would have to provide £1,000,000 in order to make the works for connecting the Staines reservoirs with their present station and from £10,000 to £12,000 a year would have to be spent in the extension of mains. With regard to the suggested partition of the New River Company's undertakings at the boundaries of the counties of Hertfordshire, Middlesex, and London the witness gave it as his opinion that these boundaries were unsuitable for a division of water-supply. These divisions do not take into account the physical necessities of the water distribution. Some of the New River Company's reservoirs inside the county of London are supplied from Hornsey which is in the county of Middlesex. Supposing, for example, that the London County Council were to take the property situated in their district and the Middlesex County Council were to take the property in the county of Middlesex it would be necessary in order to carry on the water-supply either that new reservoirs should be made in Middlesex or that a new pumping station should be put up in the London district; in either case a great outlay would be necessitated and no useful object would be attained. Again, in the case of Stoke Newington the filter beds are in the county of Middlesex and the pumping station in the county of London.

Lord ROBERT CECIL cross-examined at some length but the witness was extremely reticent with regard to the wells and to the underground water by which they are supplied.

The forty-seventh sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Jan. 30th. The Chairman (Lord Llandaff) and all the Commissioners were present. The witnesses examined were Sir Alexander Binnie who gave additional evidence on behalf of the London County Council with regard to proposed reservoirs in the valleys of the Lee and of the Thames; Mr. Charles James Moore, who appeared officially on behalf of the Thames Conservancy; and Colonel Lockwood, M.P., chairman to the East London Waterworks Company.

At the commencement of the sitting it was pointed out by Mr. Balfour Browne that Mr. Charles Edward Groves, the chemist employed by the Thames Conservancy who gave evidence at the last sitting of the Commissioners, did not on that occasion officially represent the body which employs him. His evidence must therefore be taken with that of Sir William Crookes and that of Mr. James Dewar as representing the case presented by some of the metropolitan water companies with regard to the Thames flood water.

Sir ALEXANDER BINNIE put in a diagram showing the working of the East London Waterworks Company's Lee reservoirs scheme under the conditions existing from August, 1897, to December, 1898. He put in also three diagrams showing the working of the Staines reservoir scheme under the varying conditions with regard to the abstraction of water and on the assumption that the flow of the Thames was that of the year 1898.[1]

In answer to the CHAIRMAN, Sir ALEXANDER BINNIE said that he did not think that it was worth while for the East London Waterworks Company to attempt to increase their supplies from the Lee by means of making an increase in their means of storage.

The CHAIRMAN asked whether a complete system of intercommunication between the companies would be a less expensive way to meet the necessities of the East London Company. The witness agreed that this method would be less expensive but it would necessarily involve a further draught from the Thames.

Mr. CHARLES JAMES MOORE, engineer to the Thames Conservancy, on behalf of that body said that he was authorised by the board to state that they had not in any way altered their opinion with regard to the abstraction of water from the Thames. They had expressed an opinion in a resolution passed on Dec. 5th, 1892. Their opinion was that "when after the abstraction of the quantity of 130,000,000 gallons a day now allowed to be taken for the supply of the metropolis, the day's discharge at Teddington Weir exceeds 200,000,000 gallons, there may be further taken such part of the excess as may be required for immediate consumption or for storage, but that in no case should the discharge over the weir be allowed to fall below 200,000,000 gallons unless compensation is made by a tidal reservoir or otherwise to prevent injury to the river below the site of the new lock and weir at Richmond." The Thames Conservators state that the state of the Thames would be seriously attenuated by a reduction of the minimum flow at Teddington below 200,000,000 gallons a day. In some parts of the river there is occasionally so little water that light draught passenger steamers frequently run aground. When the tide water has run off wide stretches of muddy foreshore are exposed for hours. If the minimum flow over Teddington Weir were reduced the evils of which he had spoken would exist for a longer period of the year. Another objection to an increased abstraction of water was that any diminution in the flow of the stream would result in an increased deposit of mud on the bed of the river and on the foreshore. These ill-effects would not be confined to the tideway, but would be

[1] The diagrams are of great interest, but we must defer any details of report on this branch of the evidence.

felt as high up the river as Molesey Weir. The Conservators are therefore confirmed in their opinion that the water in the river should not be reduced to a less volume than 200,000,000 gallons daily. The amount of water which passes down the Thames throughout the year taken as a whole is sufficient to meet the wants of the water companies if storage reservoirs of sufficient size existed to take it. The witness insisted that in his opinion it was of vital importance that a flow of 200,000,000 gallons a day should pass down the river at Teddington.

Colonel LOCKWOOD, M.P., in answer to the Chairman, admitted that the East London Company had failed to give an adequate supply to their customers during last autumn and on some previous occasions. They had not, however, entirely ceased to give a supply; "they did not put up their shutters."

The CHAIRMAN remarked that they put them half up and that it was clear that in a year like 1898 or even in an ordinary year the resources of the company were at present inadequate. The witness admitted that this was the case. He, however, gave it as his opinion that much of the inconvenience which had been experienced by the customers of the company last year was due to the removal of the cisterns.

The CHAIRMAN pointed out that evidence had been given before them that the cisterns were full of mice and mud. The witness said that the company refused to supply new houses which were not furnished with cisterns, but after the first supplies were given the cisterns sometimes disappeared. He was of opinion that a great deal of wilful waste had taken place in their district, and that some of their customers wasted as much water as they could to spite the company. With regard to the purchase of the companies' undertakings the witness said that they did not wish to sell. He did not think that the London County Council would be able to manage the undertakings as well as they were at present managed, and they had misled the ratepayers as to the expediency of purchase. Should purchase, however, be decided upon, the witness said that, in his opinion, the scheme of purchase which had been put forward by Mr. Banbury was the best method of dealing with the matter. If this scheme were not adopted purchase should take place under the Lands Clauses Act. His reasons for favouring purchase under this Act were (1) because it was the recognised law of the land for the sale of such undertakings; (2) because it provided recognised and well-considered machinery for assessing the value of the property; (3) because all its provisions had been contested before judges and the various points settled; and (4) because wherever a corporation had compelled a water company to sell this Act had always been the one adopted.

The forty-eighth sitting of the Royal Commission was held at the Guildhall, Westminster, on Jan. 31st.

THE INFLUENCE OF SCHOOLS IN ACCENTUATING THE SPREAD OF CERTAIN INFECTIOUS DISEASES.

III.

THE evidence to which we referred in our last two articles, published on Jan. 21st and Jan. 28th, went to show the manner in which elementary schools are apt to act as diffusers of infectious disease, and how that, although this is not by any means always the case when diphtheria is prevalent, the effects of their influence in the mass can frequently be brought out when the figures dealt with are sufficiently large and far-reaching. In this, our concluding article, we shall inquire how this influence for harm which schools are liable to exert may be best detected and controlled.

It is clear in dealing with a matter of this nature that unless there is a thoroughly well-organised intelligence department much of the energy expended on attempts at control will be more or less aimless or ill-directed. If we are to detect the earliest indications of any given school being a factor for harm we must know, as far as practicable, the exact arrangement which obtains at such school, the composition of the several departments, and the circumstances under which the children therein are liable to meet together, as, for instance, in their playgrounds or through the medium of sanitary conveniences common to girls and infants. We should also have a good general idea of the area from which the school draws its children and of the opportunities of aggregation which are afforded for the children at places other than in the secular schools. This will involve to some extent a knowledge of the habits of the district and of the arrangements made for religious instruction on Sundays.

But, however intimate knowledge of the habits of the people may be, the machinery of control will assuredly tend to break down unless one essential factor, it may be called the lubricating factor, is present. By this is meant a cordial coöperation between the sanitary authorities and the school authorities. If there be friction in this particular and personal questions are allowed to weigh unduly, all our efforts are likely to be frustrated.

In the forefront of our measures must be as nearly as possible complete information of all cases, slight as well as severe, of the current malady. Without this no accurate knowledge can be obtained of the distribution of any given disease and of its proper relations to the scholars of any particular school. A well-carried-out system of ascertaining all facts as to sickness, coupled where possible with a record of the facts so far as they concern the current malady on a spot map of a district, is of infinite value; and if on such a map there can be roughly indicated what may be termed the "sphere of influence" of each school, it will much facilitate the early detection of disease prevalence in relation to any given school. Information such as this will enable the medical officer of health to watch the development of events and to furnish the school authorities with the necessary information as to the exclusion of scholars from invaded houses, &c. It would tend to assist matters if the medical officer of health were furnished with the names and addresses of children attending each school in his district, such a list being of course corrected periodically. Under any circumstances this official should be placed by statute in such a position as to enable him to procure this list should he deem it desirable. It is clearly inexpedient in the interests both of the lives of children, and of education, that the experiences of Mr. Harris, the medical officer of health of Islington, should be repeated. This gentleman was refused by the London School Board the information above referred to in spite of the fact that Mr. Harris's object was to ascertain by inquiry at the houses of the school-children to what extent measles was still prevalent amongst the scholars. Unfortunately for the intelligence department measles is not notifiable and hence Mr. Harris was almost entirely dependent upon the School Board for assistance. Valuable, however, as is the information to be derived from compulsory notification the mistake must not be made of assuming that it tells us everything. Notification looked at broadly must be understood as meaning only that certain cases of infectious disease have been diagnosed by medical men. It leaves untouched all those cases concerning which no medical man has been consulted and all those about which the medical adviser has not yet made up his mind. To assume that notification is a complete measure of the prevalence of infectious disease is to assume that a medical man is always called in in cases of mild illness and, moreover, that he is always correct in his diagnosis. Notified cases must be regarded as merely an index, and a very rough one, of the actual facts, and search must be made for the existence of non-recognised cases in the neighbourhood of those already notified. Search in this sense may be made in more than one direction, but probably the examination of school-children in school is the plan likely to yield advantageous results with a minimum of labour. This examination to be of the greatest value should be made by a medical man well versed in the initial and late signs of infectious disease, but where this is not feasible the master or mistress may afford very great assistance by an intelligent coöperation with the medical officer of health, who should, of course, always be informed of the exclusion from school of any child owing to a suspicion of infectious disease. Doubtless the best officer to make an examination of the school-children is the district medical officer of health. He has the distribution of notifiable diseases at his finger ends, and he is thus well fitted to gauge at their proper value the facts which come under his notice. We are fully aware that at present the medical officer of health has no statutory right to examine the school-children, and we are further aware that a certain medical officer of health in London who attempted such an examination is

reported to have been "severely censured" by the London School Board, who observed that they would not allow him "or any other medical officer of health to examine children in their schools." Other school boards have, too, we believe, taken up a similar attitude. But all this is simply an additional reason for affording the medical officer of health a statutory position as regards this matter both in the board schools and in the voluntary schools. In addition to information to be derived by the assistance of the teachers in our elementary schools we must look to the school attendance officers for their coöperation, and it would probably be useful if these officers were furnished with stamped forms upon which they might notify suspected cases of infectious disease to the medical officer of health and to the school authorities, and also with leaflets of advice which they might leave at invaded houses. So, too, greater use might be made of such persons as the registrar, the clergy, district visitors, &c. With regard to the clergy, their coöperation should be sought in all matters connected with the Sunday-school and although we think that statutory powers should be conferred upon sanitary authorities to close these schools when necessary we feel sure that the clergy will always do their best to assist health administration. Into the subject of disinfection we have no space to enter here. Clearly all houses in which cases of infectious disease, be it small-pox or measles, have been discovered by whatever means should be carefully disinfected, and no children from such houses should be allowed to return to school without a medical certificate to the effect that danger of infection has passed. We fear, however, that this very elementary precaution is but too frequently disregarded.

A word in conclusion as to the sanitary condition of our elementary schools. We have at times found that the officers of local sanitary authorities have been under an impression that these institutions were outside their province and that hence they were not at liberty to search therein for nuisances. As a result of this inaction the closets in connexion with schools, more especially in rural districts, may at times be found in a condition which is far from wholesome and which would not improbably have a tendency to foster enteric fever and diarrhœa, if not other diseases of this class.

THE PURIFICATION OF RIVER-WATER FOR DRINKING AND INDUSTRIAL PURPOSES.

AN exceedingly instructive and important contribution on the subject of water-supply has recently been published in the form of a report on an investigation made at the instance of the President and directors of the Louisville Water Company by Mr. George W. Fuller who is well known as having assisted in some excellent work on the question of biological purification of sewage in connexion with the administrative work of the State Board of Health of Massachusetts. The report has been published in the form of a book which must be regarded as a valuable volume of reference considering the remarkable precision and thoroughness of detail observed during the course of the experimental inquiry.[1] In short, it is a stupendous piece of work, the report containing thousands of practical and experimental results relating to filtration, sedimentation, coagulation, and the degree of efficiency of the purifying processes investigated. The report occupies a large volume of 480 pages. The work was begun on Oct. 1st, 1895, and was practically finished by August, 1897. The inquiry deals of course with the special circumstances of the case under consideration—that of the Ohio River—but the particular conditions therein encountered obtain also elsewhere, and there can be little doubt that the results of this particular experience will be very generally applicable to the great river water-supplies of the world.

As we have said, this investigation relates to the purification of the water of the Ohio River which is supplied to the towns on its banks. The watershed of the Ohio River above Louisville is about 85,000 square miles in area. This area includes portions of the States of New York, Pennsylvania, Ohio, Indiana, North Carolina, Virginia, West Virginia, and Kentucky. As might be expected, very wide extremes in geological formation exist in this large watershed, in consequence of which, together with other factors, wide and rapidly changing variations in the composition of the river water are produced. The population resident in this large watershed is about four and a half millions. A peculiar difficulty has to be faced in the purification of Ohio river water on account of the occurrence of suspended mud silt and clay, which practically preclude filtration being adopted alone as a method of purification. These characteristics make Ohio river water a difficult and expensive water to purify. Indeed, owing to the fact that at times this river water contains large amounts of exceedingly minute clay particles subsidence alone is of no avail, and if purification is to be successful and economical the use of a coagulation method is absolutely imperative. In the case of the Ohio river water all three methods—subsidence, coagulation, and filtration—would appear to be correct in principle and the experiments relate to the conditions which were found most suitable for the purification of this water and to the methods which were found to give satisfactory results in accordance with the demands necessitated by these conditions. The most suitable coagulant found for the treatment of Ohio river water was sulphate of alumina. Persulphate of iron, though slightly cheaper, lacked some of the decided advantages of sulphate of alumina. The electrolytic production of aluminium hydrate from metallic aluminium electrodes was found impracticable both on the grounds of excessive cost and of irregularities in efficiency. With regard to the electrolytic production of iron hydrate from iron electrodes this process yields a satisfactory coagulant up to the equivalent of three grains per gallon of sulphate of alumina. But occasionally the amount of dissolved oxygen in the water is inadequate to oxidise larger quantities than this equivalent. Having regard, however, to the cost and the limitations in the amount which can be safely applied without the presence of iron in the effluent as well as to certain irregularities upon reversing the direction of the electric current this process was deemed not advisable in the present instance. Concerning the Anderson process for the preparation of iron hydrate directly from metallic iron the results of laboratory tests indicated that it was not applicable for the economic and efficient purification of the Ohio river water. Several other chemical precipitants were tried but only sulphate of alumina was found practicable. One of the chief difficulties in employing this coagulant is the regulation of the quantity of the added chemical to known volumes of the water which is constantly exhibiting variations in composition at different seasons. The scope of requirement in this regard can only be determined by experience, but it is believed by the application of a good system and by great care and close attention it would become practicable to confine the application of coagulants to a range of three or four points; but, as we have said, this can only be gauged by experience under conditions of successful practice. An excess of coagulant is, of course, to be deprecated, the chemical salt passing into the public supply. This would be detrimental to machinery and also would make the water objectionable for domestic purposes. On the other hand, an insufficiency of coagulant would leave the purifying process incomplete.

The quality of Ohio River water after purification by coagulation and filtration, preceded by subsidence as far as practicable, would appear to leave little to be desired. The effluent so obtained is practically sterile. It is bright and good to the taste. It is recommended, however, that to provide against the growth of algæ all sunny environment should be cut off by storing the filtered water in covered reservoirs. The filtered water it is stated would not give any trouble in the case of lead pipes or in iron pipes which are properly coated with protective paints. In uncoated iron vessels the corrosive action would be somewhat greater than in the case of river water owing principally to the removal of suspended matters which in a measure act as a protective coating. With regard to use in steam boilers there would be more incrusting constituents than in the river water although the annual average amount in the filtered water would be only approximately 60 per cent. of the quantity normally present in the river water during flood seasons. The effect of this addition, however, would be largely neutralised by the removal of the suspended matters and compared with the waters of other cities it would be classed as a satisfactory water for steam making.

[1] Report on the Investigations into the Purification of the Ohio River Water at Louisville, Kentucky, made by George W. Fuller, Chief Chemist and Bacteriologist to the Louisville Water Company. Pp. 480 and 8 full page plates. Price $10.00 net. New York: D. Van Nostrand Co.

The final conclusion of this admirable and colossal piece of work is that the general method of subsidence, coagulation, and filtration is applicable to the satisfactory purification of the Ohio river water at Louisville. The Warren, Jewell, and Western systems of conducting the process do not, however, appear to afford the satisfactory application of the principle on the large scale. By removing the suspended matters from the water, however, large reductions could be made in the size of the filtering plant, the amount of coagulant, and the cost of operation. It is estimated that on the basis of 25,000,000 gallons daily these reductions when capitalised at 5 per cent. would represent about 700,000 dollars. Probably for a less sum satisfactory provisions for subsidence as outlined in the report could be provided "which would not only aid in furnishing a filtered water of better quality but would also give the water consumers a better service in other regards."

The report contains an enormous number of experimental results, mechanical, chemical, and biological, which are embodied in a very remarkable series of tables. The water company and all concerned are to be congratulated on the masterly way in which Mr. Fuller, their chief chemist and bacteriologist, has attacked the problem which has been presented to him. It must have been an enormous undertaking and a very protracted inquiry. It is a model of diligence and enterprise undertaken on behalf of the public interest which might well be followed in this country. We are sure, however, that this very important contribution to the vital question of the purity of public water supplies will not fail to convey many valuable lessons to those entrusted with the details of water administration at home.

REPORT OF THE SANITARY MEASURES IN INDIA IN 1896-97.

THIS is one of the reports periodically issued by the India Office and was published in December, 1898, for the information of both Houses of Parliament. It contains chapters on the health of the European and native troops, and on the health of prisoners in jails and of the general population of India; it also contains chapters on vaccination, on medical institutions, including medical schools and lunatic asylums, and a chapter on sanitary work in that country. Appended to it are abstracts of reports by the three principal sanitary commissioners in India, and memoranda by the Army Sanitary Commission thereon.

Nearly 40 pages are first of all taken up with an introductory report prepared in the India Office of this country. Attention may be fairly called to this as an admirable sample of what may be termed *précis* writing—a much more difficult and laborious task than it is commonly believed to be; for as a matter of fact it is not by any means always easy to sacrifice redundant or irrevalent matter and to epitomise and arrange what remains so as to omit nothing of practical value and at the same time present the reader with a lucid statement of what is really essential to be known. This prefatory statement summarises the results furnished by the various Indian officials in their several reports and gives a brief and instructive medical history of the European and native population, together with a record of the progress of hygiene in that country. We have already touched upon many subjects embodied in this official publication when dealing with the reports of the Sanitary Commissioner with the Government of India, but we may nevertheless advert to a few points. In the first place, then, considering the importance of sanitation in India, we are glad to see that Surgeon-General Harvey, the Director-General of the Indian Medical Department, in his evidence before the Plague Commission recently, expressed himself very decidedly as to the benefit which would accrue to India by the appointment of a sufficient number of health officers with good qualifications, whose time could be given entirely to sanitary work. We have so frequently referred to this subject and to the importance of providing a new and improved machinery for this purpose that there is no need to dwell upon it now. Taking a disease like plague, for example, it would, we think, be futile to rely entirely upon inoculation, even supposing its protective power against attacks of that disease to become demonstrably established, for coping with an epidemic or outbreak. We agree with Surgeon-General Harvey that the natives of India would not consent to be inoculated on any large scale in anticipation of an outbreak, and until we know more about the nature and length of time over which the conferred immunity lasts we have grave doubts as to the practicability of applying this method with the object in view. Valuable as it may be, Surgeon-General Harvey is no doubt correct in saying that inoculation cannot be regarded as anything but an auxiliary to sanitary measures. The great obstacle to the introduction and application of such measures on any commensurate scale into India is the enormous expense and the extreme poverty of the native population. Apart even from the ignorance and the conservatism and caste prejudices of the natives the cost of sanitation in India on any scale at all parallel to that in this country would be altogether prohibitive. Still the time has come in our opinion for remodelling our public health system in India with the view of making its application more systematic, direct, and prompt.

Reverting, however, to the report under review we find that as regards the European army Bengal has of the four commands the highest daily sick- and death-rates. The Madras command is the healthiest and its death-rate is not much more than half that of Bengal. 54 per cent. of the total sickness in the European army in India results from venereal diseases and ague. The chief cause of mortality is enteric fever, to which 43 per cent. of the total deaths were attributable in 1896. The death-rate from this fever among the native troops, on the other hand, is only 0·04 per 1000, as against 6·31 per 1000 among European troops. Under a short-service system there is a greater supply of susceptible material and this, of course, means an increased prevalence of the fever in question. Notwithstanding all the efforts which have been made in India to discover and to check its causes it must be confessed that the practical outcome of our efforts is very disappointing. What is a serious feature in the matter is the fact that the hill stations which are the sanatoria and health-resorts of the country have been seriously and increasingly affected with this scourge. At page 57 of the report an interesting table is given of various hill stations, showing the death-ratios of enteric fever in them respectively. It is a common belief, and probably a well-founded one, that this fever tends to increase with length of occupation. In the case of most of these stations bad years have occurred at more or less irregular intervals, but for some time past, in the case of Dagshai, Subathu, and Cherat, the bad years have been very close together. Special investigations, we are told, have been made into the sanitary conditions of those stations and generally suspicion has been thrown upon the water-supply.

As illustrative of the altered condition of the European force in India as regards married soldiers we may call attention to the table at page 63 which shows that the average annual strength of children from 1886 to 1895 was 59,695, whereas in 1896 it had fallen to 5790. The death-rate per 1000 among children, it may be mentioned, is very high and has decreased but slightly, being 45·60 per 1000 in 1896, as against 46·72 per 1000 for the period 1886–95.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary meeting of the Comitia was held on Jan. 26th, Sir SAMUEL WILKS, Bart., President, being in the chair.

The following gentlemen were admitted Members of the College: Dr. Henry John Davis, Dr. Francis Edward Fremantle, Dr. Thomas Jeeves Horder, Dr. Laurence Christopher Panting, Dr. Sidney Herbert Perry, Dr. Reginald Pratt, and Dr. George Edward Rennie. Licences were granted to 122 gentlemen who had passed the required examinations and several Diplomas in Public Health were granted conjointly with the Royal College of Surgeons.

The PRESIDENT announced that the Swiney Prize for the best work on jurisprudence, which is given every five years, has this year been awarded to Dr. Dixon Mann for his work on Medical Jurisprudence. He also drew attention to a photograph of the portrait of Dr. Chambers, the original having been painted by Holbein. The photograph had been obtained through the kindness of Mr. Dodson of the British Museum, to whom the thanks of the College were tendered. The name of Dr. Chambers stands first on the roll of the College.

The Bissett-Hawkins medal for investigations in hygiene was exhibited. On one side is an excellent likeness of the founder, whilst on the reverse is a representation of Æsculapius and Hercules, with the motto, "Ob sedulo cultam medicinæ civilis disciplinam."

Several communications addressed to the College were received, amongst which were the following:—

From the Secretary of the Royal College of Surgeons of England, respecting proceedings of their Council on Dec. 8th, 1898, and Jan. 12th, 1899.

From the Queensland Public Library, thanking the College for a gift of books.

From Sir Hermann Weber, commemorating by a gift to the College the renewal of his diploma after 50 years by the University of Bonn. The PRESIDENT proposed a vote of thanks to the donor, which was unanimously adopted, and Sir DYCE DUCKWORTH (the treasurer) announced that the gift would be placed to the College Endowment Fund.

From the President of the General Medical Council, asking the opinion of the College on a proposal of the Council to obtain additional penal powers, and submitting clauses for amending the Medical Acts with that view. There were two propositions—(1) That if a medical man be deemed guilty of any offence that might cause him to have his name erased from the Medical Register the Council should have the power of erasing his name for a limited period, and that afterwards under certain circumstances his name might be returned to the Register; (2) that as long as the erasion remained in force he should *ipso facto* be deprived of all his medical diplomas. The PRESIDENT considered the second proposal so serious that counsel's opinion had been taken to the effect that the College should not give their consent to the proposal. Dr. LIVEING (Registrar) proposed and Sir DYCE DUCKWORTH seconded a resolution to the effect that the first proposition of the General Medical Council should be approved of by the College, whilst the second should not. This was adopted.

From the Chairman of the Education Committee of the General Medical Council, seeking information as to the desirability of raising the standard of preliminary education for medical students to that of the senior local and higher grade examinations. On the proposition by Dr. LIVEING, seconded by Sir DYCE DUCKWORTH, the consideration of the matter was referred to the Committee of Management.

From the Secretary of the Seamen's Hospital Society on behalf of the General Committee, having reference to the School of Tropical Medicine, with printed correspondence. It was resolved on a motion proposed by Dr. LIVEING, seconded by Dr. DICKINSON, that the correspondence should lie on the table.

Communications were received from two Members resigning their Membership.

Dr. Thorowgood, Dr. Bradbury, Sir John Williams, and Dr. Stephen Mackenzie were elected Councillors; Dr. Norman Moore was elected a member of the Library Committee; Professor Clifford Allbutt was appointed an Examiner in Medicine; and Dr. J. F. Payne was elected Librarian.

The revised report of the Leprosy Committee was accepted (see THE LANCET, Dec 10th, 1898, p. 1572) on the proposition of Sir WILLIAM GOWERS, seconded by Dr. CURNOW. A report was received, dated December 1st, from the representative of the College on the General Medical Council.

The annual and quarterly reports of the Finance Committee were received and adopted. A report, dated Dec. 12th, was received from the Committee of Management in reference to the instruction in chemistry, physics, practical chemistry, and biology. The Committee had decided "that after receiving the written opinion of the several medical schools, the Committee of Management recommend to the Royal Colleges that in Clause 3 on page 4 of the Regulations the words between the brackets be omitted. The clause will then be the same as before the alteration."

It was proposed by Dr. NORMAN MOORE and seconded by Dr. CURNOW that the report be adopted.

Dr. WASHBOURN proposed and Dr. STARLING seconded an amendment, "that the report be referred back to the Committee of Management."

In the discussion which followed Dr. ISAMBARD OWEN, Dr. F. J. SMITH, Dr. CALVERT, Dr. L. E. SHAW, and Dr. H. J. CAMPBELL took part.

The PRESIDENT having put the amendment it was declared lost by 10 to 23. The original proposition was then put and carried by a large majority.

After some further routine business the President dissolved the Comitia.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6762 births and 3716 deaths were registered during the week ending Jan. 28th. The annual rate of mortality in these towns, which had declined in the three preceding weeks from 19·1 to 18·2 per 1000, further declined last week to 17·0. In London the rate of mortality was 15·8 per 1000, while it averaged 17·7 in the 32 provincial towns. The lowest death-rates in these towns were 12·0 in West Ham, 12·9 in Cardiff, 13·5 in Croydon, and 14·4 in Halifax; the highest rates were 22·2 in Sunderland, 22·6 in Preston, 23·3 in Liverpool, and 23·8 in Plymouth. The 3716 deaths in these towns included 329 which were referred to the principal zymotic diseases, against 352 and 380 in the two preceding weeks; of these, 84 resulted from whooping-cough, 71 from diphtheria, 67 from measles, 40 from "fever" (principally enteric), 37 from scarlet fever, and 28 from diarrhœa. No death from any of these diseases occurred last week in Plymouth; in the other towns they caused the lowest death-rates in Preston, Derby, Wolverhampton, and Oldham, and the highest rates in Salford, Gateshead, Halifax, Sunderland, and Nottingham. The greatest mortality from measles occurred in Nottingham, Bolton, and Manchester; from scarlet fever in Gateshead; from whooping-cough in Huddersfield, Bristol, Halifax, Croydon, Birkenhead, and Sunderland; and from "fever" in Halifax. The 71 deaths from diphtheria included 31 in London, eight in Leeds, six in Sheffield, four in Liverpool, four in Hull, three in West Ham, three in Swansea, and three in Leicester. No fatal case of small-pox was registered last week in any of the 33 large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals on Saturday last, Jan. 28th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 2679, against numbers declining from 2939 to 2749 on the four preceding Saturdays; 220 new cases were admitted during the week, against 291, 220, and 249 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 363 and 295 in the two preceding weeks, further declined last week to 266 and were 314 below the corrected average. The causes of 54, or 1·5 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Cardiff, Bolton, Newcastle-upon-Tyne, and in ten other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Leicester, Nottingham, Burnley, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·7 and 21·3 per 1000 in the two preceding weeks, rose again to 22·1 during the week ending Jan. 28th, and exceeded by 5·1 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 18·3 in Paisley and 20·2 in Edinburgh to 23·9 in Greenock and 24·9 in Leith. The 676 deaths in these towns included 30 which were referred to whooping-cough, 15 to measles, 14 to scarlet fever, nine to diphtheria, five to "fever," and five to diarrhœa. In all, 78 deaths resulted from these principal zymotic diseases, against 88 and 94 in the two preceding weeks. These 78 deaths were equal to an annual rate of 2·6 per 1000, which was 1·1 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 35 and 34 in the two preceding weeks, further declined to 30 last week, of which 12 occurred in Glasgow, nine in Edinburgh, and four in Dundee. The 15 deaths referred to measles showed a decline of four from the number in the preceding week, and included seven in Glasgow, four in Edinburgh, and three in Aberdeen. The fatal cases of scarlet fever, which had declined from 13 to six in the three preceding weeks, rose again to 14 last week, of which seven occurred in Glasgow and three in Edinburgh.

The nine deaths from diphtheria corresponded with the number in the preceding week, and included four in Glasgow and two in Leith. Of the five fatal cases of "fever" two occurred in Edinburgh and two in Leith. The deaths referred to diseases of the respiratory organs in these towns, which had been 156 and 153 in the two preceding weeks, rose to 161 last week, and were 69 above the number in the corresponding period of last year. The causes of 31, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased in the three preceding weeks from 26·7 to 28·6 per 1000, declined again to 24·9 during the week ending Jan. 28th. During the past four weeks the rate of mortality has averaged 26·8 per 1000, the rate during the same period being 17·5 in London and 23·1 in Edinburgh. The 167 deaths registered in Dublin during the week under notice showed a decline of 25 from the number in the preceding week, and included 11 which were referred to the principal zymotic diseases, against 10 in each of the two preceding weeks; of these, five resulted from whooping-cough, five from "fever," and one from scarlet fever, but not one from small-pox, measles, diphtheria, or diarrhœa. These 11 deaths were equal to an annual rate of 1·6 per 1000, the zymotic death-rate during the same period being 1·4 in London and 3·3 in Edinburgh. The fatal cases of whooping-cough, which had been three and four in the two preceding weeks, further rose to five last week. The deaths referred to different forms of "fever," which had been one and three in the two preceding weeks, further increased to five last week. The mortality from scarlet fever corresponded with that recorded in the preceding week. The 167 deaths in Dublin last week included 21 of infants under one year of age and 30 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a marked decline from the numbers recorded in the preceding week. 11 inquest cases and 10 deaths from violence were registered; and 64, or more than a third, of the deaths occurred in public institutions. The causes of eight, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON MICHAEL JOSEPH MCCARTHY has been placed on the retired list of his rank at his own request.

The following appointments are announced:—Staff Surgeons: H. W. Macnamara to Chatham Hospital; and J. L. Barrington to the *Boscawen*. Surgeons: C. J. E. Cock to the *Revenge*; W. J. Codrington to the *Raleigh*; and W. R. Knightley to the *Excellent*.

ROYAL ARMY MEDICAL CORPS.

The under-mentioned Lieutenants are seconded for service with the Egyptian Army: S. L. Cummins and H. G. F. Stallard. Majors H. H. Johnston, C. E. Nichol, and T. Daly, and Captain G. S. Crawford have arrived home from India in the transport *Simla*.

THE COMPETITIVE EXAMINATION FOR WOOLWICH AND SANDHURST.

The *Fortnightly Review* for last month contains a trenchant criticism on the system of competitive examinations as carried out at the present time for candidates for army commissions. The subject is discussed in its physical, educational, moral, and social bearings, and the writer has a good deal to say with which most people will agree, but we are afraid that the constructive part of his article will be found to contain much that is impracticable. The paper is well worth reading and a good many parents at any rate will heartily concur with its spirit. It is no doubt true that the present system of training of young candidates for army appointments violates many of the best-established principles of the laws of health; that the course of preparatory study is, educationally speaking, unsound; that the future prospects in life of the large mass of unsuccessful candidates are injuriously affected because it is often too late for the failures to take up and be trained for another career; that the life of "grind" for the army is far from being the ideal one for a growing lad; and that the long hours of study and anxiety to succeed takes a good deal out of the freshness and brightness of life and with a good many of them only leaves behind a thorough distaste for books. The tests for purely mental qualifications in these examinations are overdone. We have always contended that a competitive examination should be competitive all round and that there should be some physical tests, so that the possessor of superior physical qualities should reap the benefit of them in the shape of marks. We consequently agree with the views of the writer in the *Fortnightly Review* in this respect which he fortifies by a reference to Mr. Francis Galton's papers on the subject. The difficulty, however, is how to apply the principle in practice.

THE UGANDA HONOURS.

The military operations in the Uganda Protectorate have been of an exceptionally trying nature and the officers who have taken part in them well deserve their honours. In the "Papers Relating to Recent Events in the Uganda Protectorate" which have been recently published it will be found that Captain G. S. McLoughlin, R.A.M.C., is specially commended for his services and that the gallantry and great devotion to duty displayed by Captain J. D. Ferguson, R.A.M.C., are fully recognised.

DEATHS IN THE SERVICES.

Staff Surgeon Henry Stewart Jackson, at his residence, Royal Naval Hospital, Chatham, on Jan. 23rd, at the age of 41 years. He studied at Trinity College, Dublin, and the Royal College of Surgeons in Ireland, subsequently taking his Fellowship degree. He entered the Navy as Surgeon in 1882 and was promoted to the rank of Staff Surgeon in 1894.

Deputy Inspector-General Mark A. Harte, aged 59 years. He joined the service in 1861, became Staff Surgeon in 1875, and Fleet Surgeon in 1882. He retired in 1893.

VENEREAL DISEASE AND THE ARMY IN INDIA.

By a general order recently issued by the Commander-in-Chief in India medical inspection of British soldiers serving in India for the purpose of detecting and checking the spread of contagious disease is to be made and punishment enforced for concealment of such disease. Inspection will take place from time to time without warning.

A dinner was given by the medical officers of the Mediterranean Fleet in honour of Surgeon W. J. Maillard, R.N., M.D. Lond., V.C., at the Malta Union Club on Jan. 13th.

Correspondence.

"Audi alteram partem."

THE DEATH-RATE AND THE WATER-SUPPLY.

To the Editors of THE LANCET.

SIRS,—In the coming Session of Parliament there will be a large crop of Bills for water-supplies. The advocates of moorlands, lakes, chalk springs, and rivers will contend in the committee-rooms over their pet schemes. It may therefore be interesting to your readers to compare the death-rate from fever for the first three-quarters of 1898 with the same period of 1897 in the principal cities of England and Europe. The death-rate has been computed, to avoid decimals, at per 1,000,000 living; those who prefer to consider the question at a rate of per 1000 will find it only necessary to shift the decimal point three spaces to the left (see the table).

One cannot help being struck with the uniformity of the incidence of the fever death-rate for 1897 and 1898 in the same towns. In some towns fever appears to be endemic, whilst in others it is reduced to insignificant numbers. Belfast had during this period a far higher death-rate from fever than any other town in Europe. Belfast, Manchester, Glasgow, Liverpool, and Sheffield obtain their water from moorlands and lakes; nevertheless, the fever-rate is very high.

The year 1898 was remarkable for the small amount of percolation and for many weeks there was absolutely none, consequently it was not surprising to find that in Hull, Portsmouth, Bristol, Brighton, and Croydon—towns which

derive their supply from the chalk—the mortality from fever was less than in 1897, but we must expect on the rising of the springs after the late heavy rains that during the next three months there will be a corresponding rise in the fever death-rate. For instance, in the December quarter the death-rate from fever in Croydon went up to 64 per 1,000,000, which is more than two and a half times the other three quarters. Water which has been exposed to air and light for a considerable time and then efficiently filtered is improved in quality, consequently London, Paris, Berlin, Copenhagen, Cologne, Hamburg, Nuremberg, Dresden, Altona, and Vienna have had a very low fever death-rate. On the other hand in the limestone districts of Lenz, Rheims, Metz, Prague, and where the water is obtained from shallow wells, as in the highly cultivated districts about Malines, Bruges, and Namur, the mortality has been excessive owing to pollution of sub-soil water. Antwerp is a good illustration of a town whose supply which is derived from a highly polluted stream (a tributary of the Scheldt) has after treatment by passing through spongy iron and sand filters become a good wholesome water, with a corresponding low fever death-rate.

—	Source of supply.	Death-rate from fever, Jan. 1st to Oct. 1st, 1898.	Death-rate from fever, Jan. 1st to Oct. 1st, 1897.
GREAT BRITAIN:—			
Belfast	Moor.	1667	955
Dublin	Mountain lake.	420	290
Norwich	Chalk.	197	182
Salford	Sandstone and moor.	190	210
Glasgow	Moor.	184	188
Liverpool	,,	172	146
Birmingham	Wells, red sandstone.	168	130
Sheffield	Moor.	160	182
Manchester	,,	133	110
Hull	Chalk.	114	159
Portsmouth	,,	112	185
Bradford	Moor.	90	82
Leeds	,,	89	94
Leicester	Upland.	68	122
London	Chalk and river.	67	79
Brighton	Chalk.	66	123
Bristol	,,	56	56
Croydon	,,	24	75
FRANCE:—			
Havre	Chalk.	509	277
Rheims	,,	270	137
Paris	Well and river.	62	71
Lille	Chalk.	55	27
GERMANY:—			
Metz	Chalk.	136	250
Cologne	River.	68	69
Hamburg	,,	39	42
Berlin	Sand.	38	37
Nuremberg	River.	35	18
Dresden	,,	24	22
Altona	,,	18	52
Munich	,,	12	55
Frankfort-on-Main	,,	12	37
BELGIUM:—			
Malines	Shallow well.	440	351
ruges	,,	433	200
amur	,,	399	434
Brussels	Moor.	110	161
ntwerp	River.	71	112
Liege	Limestone.	66	102
HOLLAND:—			
Rotterdam	Sand.	102	69
Amsterdam	,,	82	18
The Hague	,,	41	42
DENMARK:—			
Copenhagen	Sand.	56	45
SWEDEN:—			
Stockholm	Mountain.	75	41
Gothenburg	,,	9	131
AUSTRIA:—			
Lenz	Chalk.	385	290
Budapest	Wells and river.	168	132
Prague	Limestone.	159	202
Brunn	,,	147	69
Vienna	River.	46	35

Great Britain cannot pride herself on being the leader of sanitary progress. Taking 100 per 1,000,000 living as a standard for fever mortality, I find that 13 out of the 22 towns were in excess, whilst on the Continent only 17 out of 51 towns exceeded that figure—a fact not creditable to the Health Department of the Government. In Germany sanitation has progressed by leaps and bounds, with the result of a marked improvement in the death-rate from preventable disease. The Imperial Government has not been hampered by any motives of vote-catching or consideration for the scruples of the conscientious objector.

The reckless manner in which the Local Government Board have in the past sanctioned sewage-farms and cemeteries upon permeable and water-bearing strata from which increasing populations are either at the present time or will in the near future draw their water-supply must inevitably tend to increase the severity of the constantly recurrent outbreaks of preventable disease. Every local authority or water company should be compelled by law to send a monthly chemical and bacteriological analysis of every source, if more than one, of their supply to the Local Government Board who should report the results annually to Parliament and also to the councils within their area of supply. Some sources of supply now in use would be condemned and preventable disease diminished.

I am, Sirs, your obedient servant,

Carshalton, Jan. 15th, 1899. A. H. SMEE, L.C.C.

AN ALCOHOL BATH FOR BURNS.

To the Editors of THE LANCET.

SIRS,—Dr. Theodore Zangger's article in THE LANCET of Jan. 28th describing the use of rectified spirit as a lotion in certain inflammatory conditions where the skin is unbroken is of interest and, I think, of importance. Dr. Zangger's explanation of the benefit resulting is that it is due to a penetration of the skin by the alcohol vapour which is thus supposed to reach and destroy the organisms which are the cause of the localised inflammation. Whether alcohol either as liquid or vapour can destroy the vitality of a septic organism without at the same time also coagulating the protoplasm of the leucocyte or the proteids of the plasma in which it lies is to be very much doubted. One is inclined to attribute the benefit of such a dressing largely, if not entirely, to its frigorific effect. The author, moreover, makes a special point of the necessity for apertures in the protective covering of the dressing.

I have for some time entertained the belief, or rather the hope, that alcohol might have a more useful application in the treatment of burns. The idea suggested itself to me in connexion with a very trivial circumstance. Being in a small hill station in India I burnt the tip of my finger severely. Whisky was the only application at hand and immersing my finger in a vessel of it I was surprised to find a speedy relief from pain. The finger was kept in the spirit for an hour or so and next day the patch of burnt skin separated itself and the cure was complete.

The mortality from burns seems to be very much what it was ten years ago and there seems to have been no material change in methods of treatment, yet the infant who has been burnt or scalded remains a perennial spectacle at all our hospitals. There are certain considerations which make it appear that a more or less continuous bath of alcohol would be an appropriate treatment for a burn. Alcohol is a powerful germicide. We may expect that the suppuration following a severe burn would be kept within aseptic limits and sapræmia avoided. Alcohol coagulates the proteids of serous exudation and should therefore coat a burnt surface with a firm pellicle. It will also coagulate the protoplasm of exposed and injured nerve fibrils with the result that almost all the pain originating at the injured surface should be

abolished. The protoplasm of the exuberant granulations which characterise the healing of burns should be similarly coagulated. The absorption of alcohol into the circulation should be of great service in counteracting the shock which results from the injury. This absorption should become less and less as the protective film of coagulated proteids became denser.

Whether the alcohol bath might be of service in a cellulitis where sloughing has occurred, in a septic cellulitis after incisions have been made, or in a bad crush, say of the hand, where sepsis-bearing materials have been ground into the lacerated tissues, one would not like to venture a decided opinion. The continuous boracic bath for bad "smashes" of the hand and forearm adopted some years ago by Mr. Clutton has proved the means of saving many a money-earning digit. The utility of a bath of rectified spirit, pure or diluted one-quarter, one-third, or one-half, could be easily ascertained in such cases as burns of the hand and arm by the use of an ordinary arm bath. If any dressing at all be applied this might consist of fine linen wrapped lightly round the limb; the injured part should, however, have been previously immersed for some time in the alcohol. That the last state may not be worse than the first no fire or flame should be allowed in the room. The bath should be covered over as closely as possible to prevent the loss or deterioration of the spirit. This communication is, I much regret to say, decidedly theoretical in nature, but it is made in the hope that surgeons who have the opportunities will test the value of any suggestions which it may contain.

I am, Sirs, yours faithfully,

WILFRED WATKINS-PITCHFORD, F.R.C.S. Eng.

Edgbaston, Jan. 30th, 1899.

"IRRIGATION IN SUPPURATIVE OTITIS MEDIA."

To the Editors of THE LANCET.

SIRS,—I am pleased to see that Dr. Milligan recognises the importance of providing free drainage through the membrana tympani. In the absence of actual bone disease—and by bone disease I do not mean infection of the mastoid cells—the enlargement of a perforation is a more rational proceeding than to drill the bone. In my observation irrigation does not lead to a sodden condition of the parts nor does it favour the growth of granulations, but if it did I should disregard such temporary drawbacks if I were still able to disinfect the middle-ear and adjoining cavities.

I should not have troubled you with my remarks had I not been under the impression that even specialists were often unsuccessful in their treatment of this disease—an impression that is shared by many medical men. How often are patients told by their medical attendant that there is no cure for this disease. When Professor Macewen challenged the Section of Otology at the 1895 meeting of the British Medical Association held in London with their failure in this disease no one, to my surprise, accepted the challenge and since then the mastoid operation has been in favour in some quarters. But if the exponents of the dry treatment can cure these cases let them join with me in protesting against unnecessary mutilation. I have not yet seen any record of cases that encourages one to believe in dry treatment by itself, and though the opinion of Dr. Goldstein and Dr. Milligan must carry weight I feel that whenever our object is to cure poisoned tissues we shall be wise to encourage free discharge by hot antiseptic douches or irrigation. The results of irrigation in this disease I have proved to be most satisfactory and, after all, one must judge of a system by its results. If medical men generally would give attention to these cases extension of disease to the bone would become more and more rare and the only reasonable excuse for the mastoid operation would disappear.

I am, Sirs, yours faithfully,

Jan. 28th, 1899. F. FAULDER WHITE.

STOCKPORT AND DISTRICT MEDICAL SOCIETY AND THE ST. JOHN AMBULANCE ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—We enclose you copies of three resolutions passed unanimously by the Stockport and District Medical Society on Jan. 25th and ask you to insert them in your next issue. These resolutions were brought forward owing to a charge of £5 5*s.* being made by the local centre for the examination, &c., of classes under the St. John Ambulance Association whereas the head office charged only £1 13*s.* 6*d.* and £1 14*s.* for the same examinations, and as no explanation could be given of the reason of the extra charge by the head office or would be given by the local centre, and as the public discussion of this matter was damaging to an association which has for its object the welfare of the public generally, the members of this society, many of whom are lecturers, deemed it a subject worthy of their consideration and hoped that by passing these resolutions they might bring about a reorganisation of the local centre and a restoration of public confidence in the work of the St. John Ambulance Association here.

We are, Sirs, yours faithfully,

E. A. GOULDEN, M.B. Vict.,
HENRY E. SMEETH, M.D. Dub., } Hon. Secs.

Jan. 26th, 1899.

[RESOLUTIONS.]

That in the opinion of this society—

1. The charges made by the local centre of the St. John Ambulance Association for providing examiners for First Aid and other classes should not exceed those of the head office in London for exactly the same work.

2. The Stockport and District Medical Society should be represented upon the committee of the local centre by at least three of its members, nominated by the society.

3. That copies of these resolutions be sent to Lord Egerton of Tatton, President of the Stockport centre; the local honorary secretary; the chief secretary of the St. John Ambulance Association, St. John's-gate, London; His Worship the Mayor of Stockport; the Chairman of the Watch Committee; the local press; the medical journals; the Stockport Board of Guardians; and A. H. Sykes, Esq., J.P.

THE PROPOSED SCHOOL OF TROPICAL MEDICINE.

To the Editors of THE LANCET.

SIRS,—I wish to add my testimony to the value of the opportunities afforded by the Albert Docks Hospital for the study of diseases peculiar to the tropics. Through the courtesy of Dr. Manson I have paid several visits to the wards and clinical laboratory of this institution and have been shown not only cases of the tropical eye lesions in which I am specially interested but also various forms of malarial fever, cases of beri-beri, hepatic abscess, dysentery, and guinea-worm. On each occasion I noticed several gentlemen occupied in preparing slides of malarial blood, studying the movements of the amœba coli in hepatic pus, &c., in the little clinical laboratory under Dr. Manson's guidance. The conversion of this hospital into a teaching institution will, I am convinced, supply a long-felt want by equipping civil medical practitioners proceeding to our colonies and dependencies with the same armamentarium of practical knowledge so long furnished to army medical officers at Netley. I believe a great School of Tropical Medicine—second only to the splendid Army School at Netley of which we are all so justly proud—is in process of formation at the Albert Docks; and I feel sure none will congratulate the members of the Colonial Medical Service more heartily on the fact than their *confrères* of the Royal Army Medical Corps. I trust that the last has been heard of the opposition of the medical staff of the Seamen's Hospital, Greenwich, to the scheme, and I for one have not abandoned the hope that Dr. John Anderson's unfailing tact, wide experience of tropical disease, and tried capacity for communicating his knowledge to others may yet be devoted to the organisation and development of the new school.

I am, Sirs, yours faithfully,

M. T. YARR, Major R.A.M.C.

Marlborough-mansions, S.W., Jan. 28th, 1899.

OUR BOARD SCHOOLS.

To the Editors of THE LANCET.

SIRS,—The preliminary financial statement which Sir Charles Elliott, the chairman of the Finance Committee of the London School Board, made not very long ago was not by any means exhilarating reading for the London ratepayer. The expenditure has been steadily increasing and threatens to go up by leaps and bounds unless the long-suffering ratepayer interposes some check and makes it plainly manifest that the limits of his forbearance have been reached. Years ago when it was first of all determined to introduce compulsory education into this country, with its system of school boards and board schools, the scheme was

very properly regarded and welcomed as an absolutely necessary measure. Since Mr. Forster's time, however, the school board rate has been going up until, to quote the chairman of the Finance Committee, "we appear to be on a steep and dangerous gradient." As regards the general results that have attended and followed the working of this educational system public opinion is somewhat "mixed," to say the least of it, for these results have not been an unmitigated success nor have they been unattended with some feeling of misgiving and disappointment. When we come to inquire whether the school board system has increased the usefulness, the social morality, the law-abiding qualities, or the health, contentment, and happiness of those who have come under its influence there is still some room for doubt. In the case of girls they appear to have little or no knowledge of any household or domestic work. Many of the lower middle class people and shopkeepers find that they are hit in two ways at once. Whilst they are paying to teach board school children accomplishments which they cannot afford to give their own children they have to encounter an increasing difficulty in getting domestic servants and a good deal of inefficiency and discontent on the part of those they do succeed in getting. Nor is the difficulty in this respect confined to these classes, as anyone may find out by an inquiry at any registry office for servants. Some of the stories that one hears at these offices are somewhat amusing. Two girls of a very ordinary and common-place type presented themselves at a registry office. Asked what they wanted one replied that "this young lady wanted a situation." "We have no situation for young ladies," was the reply, "this is a registry office for servants. Do you require a servant's place? and where do you come from?" They had, it was found, finished their education at the board school and one of the young ladies wanted to be a scullery maid. On another occasion a girl got a situation in that capacity, but soon reappeared to say that she had relinquished it. On being asked why, she confessed that she was very well treated and had nothing to complain of "except that the cook would not let her go out twice a week to practise." "To practise what?" "The piano," she said, "and she wanted a fresh situation as scullery maid where she was allowed to play the piano twice a week." A thoroughly respectable woman, the mother of a family, was told by her youngest daughter that she would not go into service—she wanted to be independent and have time to practise the piano. The mother urged that her sisters had been or were in service and all of them had been most happy and comfortable and some had married whilst in their situations, adding, moreover, that it was far better and more respectable for a young girl when she left her home to be in a responsible family where she was looked after. But that was probably just what this girl did not want. To her mother's avowed regret her daughter refused to accept any post where she was not independent; "and," added the mother, "what with the education at those board schools, the teaching of the piano, and the influence of the other girls she meets there, a mother can do nothing with them." I have merely mentioned the foregoing as an illustration of what might be easily cited in other directions as to the decreasing effect of home influences in the present day. I am anxious that there should be no misapprehension of my meaning. It is alike the duty of the State and in the interest of society to provide for the education of these children. No one grudges paying for what is necessary to fit boys and girls for an equality of opportunity in earning their own livelihood and for becoming happy and respectable men and women; but is the present style of education at board schools the best adapted to accomplish this? As to the words of the Catechism about doing one's duty in that state of life in which God has pleased to call him that is nowadays a byword and an anachronism. Have the manners of the youth encountered in the streets improved? By all means if a pupil at any board school exhibits any exceptional ability or keen desire to get on in any direction let him or her have the full benefit of it; but, as the Americans have wisely said, "It is no good spending 1000 dollars on a 10-dollar boy," and the average boy is usually a 10-dollar boy. What I desire to see is that the State, acting *in loco parentis* in this matter, should provide the young with that kind of education and training which best fits them for afterwards earning their own livelihoods and for taking their part in the world as honest self-respecting citizens. I might allude, too, to the injurious influence which strain and mental work frequently have upon poorly-fed children of tender age with unstable nervous systems, but there is no need to touch upon that subject now. It accounts, however, for some of the abstention from school attendance of which we are hearing so much at the present time.

I am, Sirs, yours faithfully,

F.R.C.S.

*** As most of our readers are ratepayers this subject will have interest for them although it is without our professional scope.—ED. L.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Plague among Animals.—The Progress of the Epidemic.—The Plague Commission.

A REPORT regarding the conveyance of plague infection by monkeys and squirrels by M. Haffkine has been published by the Government. Seven monkeys were observed in Gaday (Dharwar District) to drop dead from trees. From the organs of two of these cultivation tubes were inoculated. In both cases plague microbes were subsequently isolated which by cultivation tests and inoculation into rats showed themselves identical with the microbe of human plague patients. As far back as November, 1897, in Kankar (Hardwar) more than 20 monkeys were found dead in the streets and microscopic examination showed plague-looking bacilli, but as no living cultures were secured the proof of the disease was not complete. The present instance in Gaday is said to be the first instance of the fact of natural plague in monkeys being unmistakeably established. The report states that it "is known now for certain that plague affects epidemically both human communities and animals. Up to this date, however, the rat was the only animal representative of this kind known. It is to be accepted at present that apart from the rat, the monkey and the squirrel can get naturally affected by that disease also, though observation shows so far not such a widespread form as is the case in man and rats. The monkey and the squirrel represent, therefore, two further factors capable of carrying the germs of plague from place to place apart from the travelling of man and the rats."

Further cases of what is probably plague amongst monkeys and squirrels have also been recently reported from the gardens at Bangalore. Dead rats were found in the cages and several monkeys died suddenly and a barking deer also died suspiciously. Two squirrels dropped from a tree close by and died in two or three minutes. In several other places dead squirrels and dead rats were found.

The occurrence of cases of plague in human beings at places where rats have been found dying or dead without any probable contact shows that it is sufficient for rats to die in a house to infect it and that the infection must be conveyed to human beings by some other agencies. It may be that, as according to Simond, the plague-stricken rat infects the fleas which infest it. He states that a bacillus morphologically like that of plague, was found in the contents of their intestines and quotes experiments to show that these fleas may infect healthy rats. Yersin observed that plague bacilli multiply in the intestines of flies. It is possible therefore that both fleas and flies may be the means of spreading plague from rats to man as well as from rat to rat. But these experiments require confirmation and the proofs of cultivation and inoculation experiments.

The epidemic of plague in India continues unabated. The following figures show its incidence in the Bombay Presidency. The cases of plague and deaths therefrom reported to the Government during the week ended Jan. 6th were 2537 cases and 2048 deaths.

In Bangalore city the outbreak has practically ceased but in the Cantonment the new cases still number from 10 to 20 daily. The plague has not yet been stamped out in Karachi, one or two new cases being reported almost every day. In Broach also plague still continues, seven to 10 cases being reported daily. Madras is so far free.

The weekly death-rate of Bombay city has gone up from 742 to 1011 (a rate of 68·4 per 1000 per annum) within the past fortnight and the fatal cases of plague reported have incresed from 119 to 220. Comparison is continually being made in the medical as well as in the lay press (often by medical writers) of the mortality of one week or month with the corresponding week or month in the previous year. Such

a comparison is wholly misleading because the outbreaks of plague do not develop according to the season or, at any rate, exactly at the same period of each year. The only just comparison is to compare the development of one outbreak with that of another whatever the dates of the year may be, the only difficulty being to fix the corresponding times of their commencements.

The following table gives the mortality in Bombay city of the various castes during the week ending Jan. 10th :—

	Caste.	Population.	Total deaths.	Plague deaths.
Hindus.	Jains	25,225	37	13
	Brahmins	37,982	27	9
	Lingaits	784	2	1
	Bhatias	7,891	6	—
	Hindus of other castes	451,465	640	153
	Hindus (low caste)	45,169	18	20
	Musalmans	155,101	200	12*
	Parsees	47,458	35	5
	Jews	5,021	3	1
	Native Christians	29,712	30	4
	Eurasians	4,330	3	—
	Europeans	11,290	4	1
	Negro Africans	146	2	—
	Buddhists	190	—	—
	Other and unknown castes	—	4	1
	Totals	821,764	1,011	220

* This item is probably very fallacious. The Musalmans largely employ quacks and their females seldom see anyone qualified to render a trustworthy return. Moreover, when plague is known a false report is made in order to avoid subsequent interference with their extreme domestic privacy. No death certificates being required the friends give any cause for death they choose. Concealment of plague is therefore especially common in this caste.

As showing the difference in plague administration the health officer for Bombay records that of the 220 cases of plague recorded in the past week only 85 were removed to hospital and only 284 contacts were segregated. During the week 7691 houses were inspected and of these 564 were disinfected and 67 vacated.

Reports have been circulated during the last few days of a recrudescence of plague in Calcutta and it appears that there have been several suspicious cases lately and that two at least have been proved more or less conclusively to be plague. The protection afforded by inoculation at Gaday is remarkable, as the following figures show.

—	Population.	Total attacks.	Total deaths.
Once inoculated	3676	8	4
Twice inoculated	6706	3	2
Uninoculated	8726	118	74

Objections to all these published records are that the populations are estimated by the last census and from various causes may be very wide of the mark, and that there being no proper identification of inoculated persons reliance can only be placed on verbal statements or the production of a (possibly false) certificate.

The Plague Commission has been sitting at Agra. The only evidence of importance is that of Mr. E. H. Hankin, Chemical Examiner and Bacteriologist to the Government. It is reported that he had experimented for several months with water, clothes, human dejecta, and dust of floors in plague-infected houses without discovering the plague microbe. He had obtained microbes from mud appearing in their microscopic characters to be plague microbes, but they were really not so. He had found the plague bacillus in the nasal secretions of a monkey which when injected into the noses of mice killed them. He is reported to have said that no regular test for the plague microbe had been discovered. He advocated burning the huts of villages or the burning of the earth of the floors.

Jan. 13th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Death under Chloroform.

A REGRETTABLE death under chloroform occurred at the General Hospital on Jan. 27th. A man, aged 41 years, came in for the removal of a sebaceous cyst from his neck below the right ear. Chloroform was given by one of the house surgeons, the man struggled for a time, and suddenly his heart ceased to beat. A necropsy made by the police surgeon showed evidence of some bronchitis and old pleural adhesions, with alcoholic indications in other parts. An inquest was held subsequently and a verdict in accordance with the medical evidence was returned. I understand that there are rules laid down by the medical committee of the hospital as to the administration of ether as the routine anæsthetic and as to the presence of the senior resident surgical officer on such occasions. The authorities are mindful of the risks in this direction and some time ago appointed two anæsthetists to the hospital. A certain number of cases necessarily occur in their absence when the administration is conducted by one of the resident staff, hence the importance of recognising the precautionary rules and the responsibility in acting upon them.

The Children's Hospital.

The thirty-seventh annual meeting of this institution was held on Jan. 23rd. The report stated that the number of in-patients treated during 1898 was 949, as against 919 the previous year. The out-patients numbered 13,445, against 13,009. The detention-rate was 19·9. The cost of the patients' maintenance was 3*s.* 2*d.* and the officers 7*s.* 5½*d.* per head per week. The total expenditure amounted to £4999 1*s.* 7*d.* The income unfortunately had fallen off, the subscriptions having diminished by £64. Some increase in the size of the out-patient rooms is considered to be necessary and a scheme for enlargement was submitted. It was stated that the lease of the building had 20 years only to run and that provision must be made to meet this contingency. Various donations were promised and votes of thanks passed.

Grocers and Bakers on Self-raising Flour.

A deputation from the Grocers' Association waited upon the Health Committee on Jan. 16th relative to the sale of self-raising flour. For some years this flour has been sold by grocers, but of late prosecutions have been instituted and fines imposed after evidence that there was a certain amount of maize flour mixed with it. The deputation wanted to know if the committee would fix a standard of the quantity of maize flour which might be used—say, to allow 5 per cent. of farinaceous substance other than wheaten flour. The chairman of the Health Committee said that they could not give any undertaking to this effect and that they must carry out the intention of the Food and Drugs Act, but the views of the deputation would have consideration. Following this on Jan. 25th a deputation from the Master Bakers' Association interviewed the Health Committee. They stated that the bakers considered the addition of maize flour to be unnecessary and that in their daily practice they made self-raising flour by simply adding carbonate of soda, tartaric acid, and cream of tartar to wheaten flour sufficient to give it the effervescent property. The chairman of the Health Committee pointed out that all they had to do was to see that the purchaser got what he paid for. It will be interesting to note the future development of these rival claims. There does not so far appear to be very much amiss in the way of adulteration, the maxim to be followed being one of a certain advertised product—if you ask for a particular thing see that you get it.

Death of James Yeomans Totherick, M.D. St. And.

I regret to announce the death of Dr. Totherick which occurred on Jan. 26th at his residence, Park Vale, Wolverhampton. Of Scotch descent, the son of a Methodist minister, Dr. Totherick was educated at the University of St. Andrews where he obtained the M.D. degree in 1862. After this he settled in practice at the village of Sudbury, in Derbyshire, and about 25 years ago went to Wolverhampton. Here he was appointed one of the physicians to the hospital, a post he held until his death. Dr. Totherick was a man of cultured tastes, fond of literary pursuits, finding relaxation from his professional duties among those of similar habits. He took an interest also in public matters, becoming a member of the board of guardians and at one time chairman

of that body. Of somewhat reserved manners and critical temperament his qualities were best appreciated by those who knew him best, and to these he was an interesting companion and a good friend. His professional work was performed with careful and attentive consideration. For a year or two past his health has been failing, the symptoms being attributed to a form of pernicious anæmia. Travel and change of scene and surroundings failed to give him permanent relief and towards the end he declined rapidly. He leaves a widow but no family.

Jan. 31st.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Liverpool Royal Infirmary.

THE annual meeting of the trustees of the Royal Infirmary was held on Jan. 30th. The treasurer said that at no period of the history of the infirmary either in the old or in the new building had so much work been done as in the year just closed both as regards in-patients and out-patients. The number of casualties treated had reached the large total of 17,906. The expenditure on the charity had been £13,668 at a cost of £51 9*s.* 4*d.* per bed occupied. The deficit was £2089. Some permanent additions and improvements had been found necessary. More suitable lavatory accommodation for the increasing number of students in connexion with the medical school had been provided at a cost of £350. Financially the year had been disappointing. Only one considerable sum from the precarious source of legacies had been recorded, and had it not been for the endowment of a bed by his widow in memory of the late Dr. James Turnbull, a former physician to the infirmary, donations would have been also very meagre. Eight beds were now endowed from donations of £1000 each. The maintenance fund had been drawn upon during the year to the extent of £2749 and the committee deplore the gradual depletion of that fund. The debt on the working expenses now stands at £2089. More patients had been sent to the Woolton Convalescent Institution and other sanatoria. A remarkable fact was elicited at the meeting that in the year 1821, when the permanent and floating population of Liverpool was estimated at 151,000, the subscriptions to the infirmary were £2105, whereas in the year 1898, when the population had increased to 668,545, the subscriptions were only £3200, a difference of only £350 as compared with 70 years ago. Two important changes had taken place during the year in the *personnel* of the honorary medical staff, the first being due to the death of Dr. John Wallace, the gynæcological surgeon, who was succeeded by Dr. T. B. Grimsdale. Mr. Frederick W. Lowndes's period of office as surgeon to the Lock Hospital having expired he was appointed consulting surgeon. To ensure more efficient working of the outdoor department two casualty officers have been appointed who also take charge of the ambulance. Mr. Ralph Brocklebank was re-elected honorary treasurer, an office which he has filled for 20 years. The retiring President, Mr. John Brancker, made the customary donation of 100 guineas.

The New Medical School of University College and the Royal Infirmary.

The land upon which the old medical school buildings are erected has recently been transferred by the trustees of the Royal Infirmary, to whom it belonged, to the governors of University College. The land, consisting of 1800 square yards, together with the old buildings have been handed over to University College at a peppercorn rent for a term of 999 years on the condition that the medical school be rebuilt on plans approved by the committee of the Royal Infirmary and that the new building be always used as a medical school in connexion with the Royal Infirmary and that it be maintained by University College.

University College, Liverpool: Biennial Dinner of the Medical Faculty.

The medical faculty of University College held their biennial dinner at the Exchange Station Hotel on Jan. 28th under the presidency of Dr. Richard Caton, the chairman of the faculty. The invited guests included the Lord Mayor, the Rev. S. A. Thompson-Yates (the donor of the Thompson-Yates Laboratories in University College), Sir John Brunner, Bart., M.P., Mr. Alfred L. Jones, the Stipendiary Magistrate, the City Coroner, Principal Glazebrook, Mr. Ralph Brocklebank (treasurer of the Royal Infirmary), &c. The toast of the "City of Liverpool" was proposed by Professor Strong and replied to by the Lord Mayor. "The Medical Charities of Liverpool" was proposed by the chairman and responded to by Sir James Poole and Mr. W. P. Hartley. The toast of "University College" was proposed by Mr. Ralph Brocklebank and replied to by Sir John Brunner. The dinner was in every way a great success.

Feb. 1st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Report by Sir Henry D. Littlejohn on Pulmonary Tuberculosis in Edinburgh.

SIR HENRY LITTLEJOHN, as medical officer of health of the city, has drawn up a report on Pulmonary Consumption in Edinburgh. It begins by saying that the mortality from consumption has been decreasing as a result of improved hygienic surroundings and other causes. He gives a table of mortality from pulmonary consumption in two decades and contrasts it with the total mortality and the mortality from ordinary infectious diseases. From 1878 to 1887 the total death-rate per 1000 was 19·0, for phthisis 2·1, and for zymotic diseases 2·1; from 1888 to 1897 the total death-rate was 18·0, for phthisis 1·8, and for zymotic diseases 1·7. He then proceeds to consider the question: What can be done in a city like Edinburgh still further to lessen the ravages of this scourge? He considers this under a number of heads—1. The corporation must continue the improvement of insanitary areas. 2. He emphasises the necessity of regular cleansing and inspection twice weekly of common stairs in the poorer districts. He evidently dislikes the common stair and prefers the balcony system. 3. He advocates the use of sea-water for cleansing and watering streets and closes. He also advocates the establishment of baths for the poorest classes. 4. He wants handbills and notices posted to lessen the amount of spitting which is so prevalent in public places and public vehicles. 5. He wants various city agencies to distribute bills drawing attention to the danger of the expectoration from phthisical patients and he appends a form of handbill which might be issued. He then enters into a number of interesting statistics dealing with the mortality in the wards of the city, the age, sex, occupation, and class of house occupied by the victims. He further asks the question: Can the corporation interfere with beneficial effect in the course of this disease? and his answer is that he does not see how it can do so. He considers the question of parochial relief and thinks the parish council might get its rules relaxed by the Local Government Board and that it might also arrange to provide a certain amount of beds for the housing and nursing of cases which cannot be attended to at home. He concludes his report by considering the question of notification and he does not see his way to recommend its adoption mainly because of the expense it would entail. He estimates that there are 5000 cases of phthisis in the city. He evidently thinks that as regards tuberculosis in cattle the next move cannot be made until Government takes the matter up.

Edinburgh Public Health Committee and Phthisis.

At a meeting of a sub-committee of the Public Health Committee of the Town Council it was agreed to have a conference with the councils of the Royal College of Physicians and the Royal College of Surgeons of Edinburgh, and the principals of the Veterinary Colleges on the treatment of consumption. It was also decided that phthisis should be notified and that a circular should be issued containing suggestions and indicating precautions in cases of phthisis.

Gynæcological Appointments to Leith Hospital.

The managers of Leith Hospital have appointed Dr. Brewis and Dr. Haig Ferguson as gynæcologists to the hospital in place of Dr. Berry Hart who has resigned.

Lectures on Teratology and Ante-natal Pathology.

Dr. J. W. Ballantyne is to deliver six lectures on this subject at the University of Edinburgh on consecutive Fridays, beginning on Feb. 3rd. These lectures are delivered on the recommendation of the medical faculty and

senators, a suitable recognition of the eminent position Dr. Ballantyne has made for himself in this department.

The Society for the National Registration of Plumbers.

On the evening of Jan. 26th a lecture was delivered in Edinburgh under the auspices of the Society for the National Registration of Plumbers by Dr. W. Leslie Mackenzie, medical officer of health of Leith, on the Hygienics of Diphtheria. The chair was occupied by the convener of the Public Health Committee of the Edinburgh Town Council.

University of St. Andrews.

At a meeting of the University Court held on Jan. 24th the court authorised the expenditure of £250 towards fitting up the new medical buildings and empowered the Business and Finance Committee to provide without delay such other fittings as might be necessary, the total cost not to exceed £1500. It was resolved to proceed at once with the erection of a physical laboratory. The court agreed to advertise for an external examiner in public health. Mr. G. S. Newth, F.C.S., F.I.C., Royal College of Science, South Kensington, was appointed an examiner in chemistry, and Mr. F. G. Proudfoot, M.A. St. And., M.B., C.M. Edin., Oxford, was appointed an examiner in materia medica. It was resolved to intimate to the Senatus Academicus that the court propose to appoint Mr. A. T. Masterman, B.A., D.Sc., to be lecturer on embryology. The court also sanctioned the appointment as from the commencement of next summer session of Mr. James Gray, M.A. St. And., M.B., C.M., F.R.C.S. Edin., as assistant to the professor of surgery in the University College.

Curious Action against a Medical Man.

The action brought against Mr. James Devon, medical officer of the Duke-street Prison, Glasgow, for alleged assault on an engineer who was at the time undergoing a sentence of imprisonment, has been dismissed with expenses against the pursuer. It will be remembered that the act complained of was the vaccination of the prisoner, and the medical officer was charged with misrepresentation and with the use of impure lymph and of an unclean instrument. The sheriff has found these charges to be unsubstantiated and has decided that as the pursuer offered no objection to the performance of the operation therefore no legal assault was committed.

Glasgow Eye Infirmary.

At the annual meeting of the subscribers held on Jan. 25th, Sir Jas. King, Bart., being in the chair, it was intimated that the increase in the number of both in- and out-patients had forced the directors to consider the question of enlarging the infirmary. At present it has not been decided whether the addition should be made to the older buildings in the East-end or to the larger and more recent hospital in Berkley-street. The report announced with regret the retirement of Mr. Munsie who has for many years acted as treasurer to the infirmary.

Glasgow University.

Negotiations have been in progress with a view to avoid a contest for the seat on the court rendered vacant by the death of the Rev. T. W. King. So far no agreement has been reached and it seems probable that a contested election will be inevitable. Mr. King belonged to the so-called "university reform" party which by an amicable arrangement has for some time divided the representation with their more conservative opponents. No active steps have yet been taken in connexion with the vacant chair of Pathology but it is understood that there will be several local candidates. The salary attached to the chair is £1100, private practice being forbidden. The patronage is in the gift of a special board of curators four of whom are nominated by the University Court and three by the directors of the Western Infirmary. This arrangement ensures the election of the same individual both to the University chair and to the position of pathologist to the infirmary.

Feb. 1st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Dublin Metropolitan Technical School for Nurses.

THE annual meeting of the governing body of the above school was held on Jan. 20th, the chair being filled by Mr. R. L. Swan, President of the Royal College of Surgeons in Ireland. The honorary secretary read the report, from which it appeared that during the past year 124 candidates, from the five Dublin hospitals which coöperate with this institution, had attended the lectures of Dr. E. MacDowel Cosgrave on anatomy, physiology, and hygiene. The education of nurses is assuming additional importance in Ireland owing to the fact that many appointments are likely to be made under the new Local Government Board regulations.

Death of Sir John Nugent.

Sir John Nugent, who was widely known in Ireland for many years, died in London on Jan. 26th, having reached the venerable age of 95 years. Sir John Nugent was long ago medical attendant to Daniel O'Connell who had a very high opinion of his ability. He subsequently became a Commissioner of Lunacy in Ireland and his reports as Inspector of Asylums were recognised as especially valuable. The late Sir John Lentaigne was associated with him in this work for many years.

Irish University Education.

The question most discussed in Ulster at present is Mr. Balfour's proposed settlement of the difficult question of Irish university education. Briefly put, the Leader of the House of Commons proposes to establish two new teaching universities—one in Dublin and one in Belfast—on precisely similar lines. The one in Belfast is to absorb the existing Queen's College; the one in Dublin would probably have its headquarters in the present Royal University which would then cease to exist. Both universities are to be subject to the Test Acts; all scholarships and fellowships paid out of public funds are to be open to competition irrespectively of creed. No public endowment is to be given to chairs in Philosophy, Theology, or Modern History; professors are to have a right of appeal against unjust dismissal and the number of clergy on the governing board is to be strictly limited. In Ulster there are many who oppose Mr. Balfour's scheme as they conscientiously object to making education denominational, forgetting that even at the present time the Royal University is indirectly denominational; but, on the other hand, there is an increasing body of thoughtful men in Ulster who feel that Mr. Balfour has made out a most convincing case for his proposals and who argue that the time has come to make an attempt to settle this vexed Irish question. Those who are personally engaged in college and university work in Ulster are largely in favour of Mr. Balfour's scheme. They believe that the time has arrived for a teaching university, "properly equipped," to be established in such a great centre as Belfast. They fail to see why Ulster students should, after receiving all their education in that city, be compelled to go to Dublin to be examined for degrees in the various faculties of the Royal University. There might in former years have been some ground for this arrangement, but it must be conceded that all this has changed. Belfast has grown to be a city larger in population than Dublin and educational matters have made enormous strides in that city where there is now quite a number of educational institutions. In Queen's College there is an Arts Faculty, a school of engineering, and a Faculty of Law, all doing admirable work. There is also a very large medical school whose students form more than one-half of all those who graduate in medicine in the Royal University. The Queen's College in Belfast has been keeping well abreast of recent scientific advancements, as is evidenced in the very modern chemical, physiological, and pathological laboratories which were formally opened two years ago by Lord Lister on the occasion of the jubilee of the College. There are excellent special hospitals of all kinds in Belfast and at the present moment the architect who designed the Birmingham Hospital is preparing plans of the new Royal Victoria Hospital towards the building of which—in commemoration of Her Majesty's jubilee—a sum of more than £100,000 has been contributed by the citizens who felt that the present old Royal Hospital was not equal to the increasing demands made upon it. There are thus ample opportunities for clinical teaching so essential to a medical school. I mention all these points to show that not only has the time come, but that matters are quite ripe for the establishment of a university in Belfast. It is surely time that Ulstermen had a university "fully equipped" in every faculty, suited, as Mr. Chamberlain believes such an institution should be, to the environment in which it is located—a university "that will train schools of competent men in all branches of

knowledge that have any national importance." One thing, I think, all true lovers of education are agreed upon is that the present state of affairs is well-nigh intolerable. University education in Ireland may and, I believe, can be made better. At any rate, in the opinion of many it cannot be worse than at present in its practical working. Not only are all parties dissatisfied with the present arrangements, but the uncertainty as to what may be the ultimate outcome is doing incalculable mischief. Many graduates of the old Queen's University refuse to allow their sons to go to the Royal University as they fear it in turn may soon be defunct, and so at the present moment many of the Ulster youths are being sent out of the country for their university education. Mr. Balfour deserves the greatest praise for his courageous attempt to settle a question which has baffled so many statesmen. Those who object to his proposal to establish two more universities should recollect that at present there are but two in Ireland and that of these only one is a teaching body; while there are four in Scotland, and in England in addition to Oxford, Cambridge, London, Durham, Victoria, and Wales, Birmingham is likely soon to have a university. There are 15 in France and 21 in Germany. Whatever may be the ultimate issue of Mr. Balfour's proposals everyone in Ireland (where opinion is so divided) believes that he is influenced by the highest motives and the utmost sincerity in his desire to settle the question of Irish university education.

Medical Men and the New Urban Councils.

Last week I stated that the new rule issued by the Local Government Board, to the effect that no paid officer engaged in the administration of the Poor Relief (Ireland) Acts, 1838 to 1898, would be eligible to serve as a county councillor under the Local Government (Ireland) Act, 1898, would, if applied to county borough councillors, disqualify two members of the Belfast City Corporation—Alderman Bigger, M.D. R.U.I., and Dr. John Barron. The town clerk has just received an intimation from the Local Government Board to the effect that their order does not appply to the councils of municipal boroughs and consequently I am glad to announce that the two medical gentlemen are not affected by it.

The Samaritan Hospital, Belfast.

At the annual meeting of the Samaritan Hospital held on Jan. 30th it was reported that during the past year 712 patients had been treated in the extern department while 194 had been admitted to the wards. 147 operations were performed (including 25 abdominal operations) with three deaths. A new operating theatre has been added. There is a balance of £200 on the wrong side, the subscriptions and donations for the year showing a decrease, while the household expenditure has increased. The new wing has enabled the surgeons to give relief to a greater number of sufferers. It has been decided to form a ladies' committee.

Jan. 31st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A New Method of Purifying Air.

AT the meeting of the Academy of Medicine held on Jan. 24th M. Laborde, the head of the physiological department at the Faculty of Medicine, presented a report upon some work done together with M. Jaubert embodying a discovery which apparently possesses great practical interest. The report dealt with a chemical preparation which by one and the same operation removes the carbon dioxide from respired air as well as the watery vapour and other expired products and also restores the exact quantity of oxygen which has been used up. In a word, this substance by simple contact with respired air regenerates it completely and gives back all its primary properties. According to M. Laborde and M. Jaubert three or four kilogrammes of this substance allow a man to live 24 hours in a confined space without any renewal of the air from outside. Experiments made upon guinea-pigs shut up under bell glasses have been very satisfactory. Other experiments have been made upon human beings by means of a mask so constructed that it allows the passage of air, regenerated by means of M. Laborde's apparatus, to the respiratory tract. This discovery would appear to have a great practical use for persons obliged to work in irrespirable media, such as miners, firemen, sewermen, and divers. M. Laborde considers that his invention will also be applicable to submarine boats.

The Hygiene of Bakers' Ovens.

The Council of Hygiene has just come to a decision rendered necessary by certain cases of poisoning following upon the consumption of bread baked by certain bakers. A police regulation of 1877 had forbidden bakers and pastrycooks to heat their ovens with wood which had been painted or treated in any way with chemicals. As a matter of fact, some 60 persons who lived in the same quarter and were supplied by the same baker were one morning very nearly poisoned. Examination of the oven and the dust from it revealed the presence of a large quantity of salt of lead. Little by little, however, the strict surveillance as to this point was relaxed, all the more easily because bakers began to use new ovens which were heated by a fire outside them, and as all danger appeared to be avoided by this fact both bakers and pastrycooks heated their furnaces with any and every kind of wood. Naturally they took to the cheapest kinds and so used wood from old houses whether painted or not, old sleepers from the railway impregnated with creasote and sulphate of copper, and even disused blocks of wood paving. The new regulation of the Council of Hygiene demands the strict application of the old regulations, basing the claim on the fact that such wood as is now used may contain salts of lead, copper, or arsenic which are volatilised by the heat and deposited upon the floor or roof of the oven.

The Transmission of the Agglutinative Property in Typhoid Fever by Way of the Placenta.

At the meeting of the Hospitals Medical Society held on Jan. 13th MM. Mosse and Frenkel communicated a report on the above subject in which they drew the following conclusions: (1) the typhoidal agglutinative property can pass from the mother to the fœtus unaltered by way of the placenta; (2) this property is found in a full-time child when born of a mother who has suffered from typhoid fever during gestation; (3) more feeble from the beginning in the child than in the mother, it becomes progressively weaker after birth and appears to be a kind of passive loan arising from the filtration of agglutinative matters through the cellular barriers of the placenta; (4) the energy of the agglutinative powers in the mother and especially the length of time during which the agglutinative matters impregnate the placenta are important conditions of the transmission of the agglutinative powers from the mother to the child; and (5) the agglutinative powers of the mammary secretion as a rule are far weaker than those of the blood but in some cases attain a considerable magnitude—e.g., as much as 1 in 100. The same two conditions—namely, energy and duration—which obtain as to the transmission of agglutinative powers by way of the placenta without doubt exist with regard to the transmission from nurse to suckling.

Conviction of a Medical Man for Illegal Practice.

On Jan. 2nd the Tribunal of Dieppe convicted a young medical man who, having finished his studies and being on the eve of sending in his graduation thesis, had seen some patients on behalf of one of his colleagues. He had also done some work for the Assistance Publique. He had only done what plenty of other young medical men do who see an advantageous opening and jump at it while losing no time in complying with the formalities of the last examination which are very tedious. He had arranged for the publication and defence of his thesis. The law allows for cases of this sort provided that the would-be practitioner applies to the Prefect for a permission which is granted provisionally for a term of three months. The tribunal, however, condemned this practitioner because he had not asked for this permission which, by the way, hardly anyone ever does ask for. The medical associations have been much moved by this underhanded severity, for the conviction stands as being for illegal practice. The severity shown in this case is all the more astounding when compared with the tolerance shown by the tribunals to bone-setters and quacks of all kinds who have carried on their "practice" for years in spite of the complaints made by medical associations. The most piquant feature in the case is that the practitioner being advised of his prosecution hastened to fulfil all the necessary formalities so that when he appeared in court to be condemned for illegal practice he was in very truth a doctor of medicine.

Jan. 31st.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Baths of Weissenburg.

THE large hotel of the baths of Weissenburg in the Simmen Valley near Thun (Bernese Oberland) which was burnt down last spring has been rebuilt and will be opened in May, 1899. The springs of Weissenburg which contain considerable amounts of carbonate and sulphate of magnesia and calcium are well known for their efficacy in phthisis.

Medical Students at Swiss Universities.

The number of medical students studying at the five Swiss universities steadily increases from year to year; it runs up to 1181 for the winter term, 346 of whom are ladies (mostly Russian, German, Austrian, and American). The medical faculty of Bâle numbers 126, Lausanne 158, Berne 240, Geneva 297, and Zürich 360.

Prevention of Infective Diseases.

Some years ago the sanitary authorities of Zürich in order to prevent the spreading of infective diseases urged the medical practitioners to supply themselves with linen coats easy to disinfect to be left outside the sick room of private patients. The authorities offered to disinfect these coats as soon as notice was given of the recovery of the patient or of the removal of the same to an infection ward, and also offered to restore the coat properly disinfected to the owner. As only a few of the Zürich practitioners availed themselves of this opportunity the sanitary authorities have taken one step more and an important one. Imitating the example of Lausanne they now offer on notification of any case of diphtheria or scarlet fever immediately to send a disinfected linen coat to the patient's house to be put on during the time of treatment free of charge. It is to be hoped that many medical men will now avail themselves of this opportunity of preventing the spread of infective disease. Typhoid fever and whooping-cough being not so easily transmitted by means of third persons if a due amount of necessary precaution is taken and measles and German measles being often very prevalent and not so dangerous these precautions have had to be limited to scarlet fever and diphtheria. This seems especially necessary in the latter case as a great many more cases are now treated at home since the antitoxin treatment in the earliest stage insures the same results as hospital treatment.

Zürich, Jan. 30th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Florentine School: its New Clinical Buildings.

THE event of the week has been the opening on Jan. 23rd of the new clinical wards in the Hospital of Santa Maria Nuova—wards dependent on the Istituto di Studi Superiori, or school of pre-graduate and post-graduate instruction. In addition to these purely clinical accessions to its resources the Istituto has an Istituto Antirabico, inaugurated likewise on Jan. 23rd, and at last putting Florence on an equal footing with Milan, with Rome, and with Naples in dealing with hydrophobia prophylactically and clinically. Never to despair of Italy is the moral to be deduced from the event solemnised so impressively and so eloquently on Jan. 23rd last. In spite of Tuscany's brilliant record in the annals of the healing art her capital has been but ill provided with the means of clinical and laboratory instruction—the *personnel*, as is usually the case throughout Italy, being far superior to the *matériel*. Some eight years ago it was thought a mighty advance when Professor Federici, who held the chair of clinical medicine, had at his disposal two clinical wards, three rooms for laboratory work, and an amphitheatre for lectures. His not less able and accomplished successor Professor Grocco was barely installed in the clinical chair when he set himself to improve on this state of things. He found the whole teaching apparatus representing a money value of less than £80, and to-day, after six years of indefatigable appeals, canvassings, and personal contributions, he has raised the teaching resources of his chair to four clinical wards, comprising 70 beds, with four rooms for paying patients, accommodation for assistants, and laboratories for every department of pathological research (chemical, microscopical, and bacteriological) second to none in Italy and worthy to rank with those of the higher French or even German schools. Add to this the publication of a weekly clinical record embodying the best Florentine work, a reading-room where more than 60 journals in four languages may be consulted, and a library of 1100 volumes, and some notion will be formed of the accessions made to the resources of clinical teaching in Florence within six years. Nor is this all. An Istituto for the practice of the Pasteur methods in rabies has been opened contemporaneously with the new clinical wards and Professor Grocco is already laying the lines of a department for medical gymnastics (*iatro-meccanica* and Swedish massage), to be a *fait accompli* in two years, and a department for the preparation of "sieri curativi" (seratherapy in all its ramifications), to be completed in a few months. Thanks to the head of her clinical and consulting practice Florence will begin the twentieth century with a teaching equipment she has never yet known, and if her achievement has hitherto been so honourable in spite of every conceivable disadvantage, what may it not become when her students are put level with their contemporaries in the matter of facilities and resources hitherto denied them? It was this prospect that inspired Professor Grocco to one of the most glowing passages in his finely classical address to the great audience of Jan 23rd last. Instead of the one "adjutant" and two assistants of his predecessor he has now, besides the "adjutant," 16 assistants, representing posts so eagerly coveted throughout Italy that this year he has had to refuse the application of more than 30 candidates from nearly every school. Phalanx after phalanx of well-trained workers are in this way sent forth annually to fill chairs, to act as *privat-docents*, and to serve in the various departments of hygiene, public, naval, and military. Florence, moreover, while not a university, but simply a training school, is also a resort of post-graduate study as is implied in the very title, "Istituto di Studi Superiori," or, as Professor Grocco eloquently put it, her task is not only "di istruire i giovani per la laurea ma di perfezionarli una volta laureati" (to prepare youths for graduation but to carry them towards perfection when they have graduated). "From my heart," he added, "I yearn for the day when, given a sufficient development and a sufficient endowment for every laboratory, there may be added to the class list of subjects for undergraduates a special class list for medical men 'perfezionandi' (to be perfected), so that the practitioners who wish to enlarge their theoretical and practical knowledge may really find in this faculty a well-devised and coördinated series of courses in lecture room and laboratory which may assist them in the attainment of their object. To no city is our 'pious wish' more appropriate than to Florence, the seat of delightful repose, the intellectual centre *par excellence*." The entire discourse was worthy of the occasion and of its author.

Jan. 28th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Care of the Insane.

A LITTLE more than two years have elapsed since the institutions for the insane of New York city were transferred to the State and over three years have passed since the institutions in King's County became a part of the State hospital system. All of the insane, except those in private institutions, are now in well-organised and well-managed State hospitals and have the advantages of curative treatment. While the hospitals have been greatly improved during the past year in every respect the cost of administration has been greatly reduced, the per capita cost during that period being only $184.16—the lowest in the history of the State hospital system. Prior to 1893 the cost of caring for patients in the State hospitals averaged more than $222 per year, a reduction amounting to more than $38 per patient. How great this economy is can be readily appreciated when it is stated that there are nearly 21,000 insane in the State hospitals of New York at the present time. In other words, the expenditures during the past year were about $600,000 less than they would have been had the rate of 1893 prevailed. In every department of the State hospitals improvements have been made. The

patients are better clothed, the buildings are better furnished, the sanitary arrangements are improved, and the food-supplies are better in all respects. Special care is now being given to the eyes and teeth of the patients. Large numbers of these unfortunate people have been greatly neglected in these respects in the past. With the improvement in the care of the insane during the past few years there was at first a considerable increase in the number of admissions, many people formerly preferring to keep their friends at home rather than risk their having to suffer in public institutions. It is believed, however, that the increase by reason of such causes has reached a maximum, as the figures tend to show that the tide is strongly setting the other way. For example, the net increase for the year 1895–96 was 653; for 1896–97, 813; while for the year just passed the net increase has dropped down to the unprecedentedly low figure of 634. Likewise in the matter of new admissions from homes for many years prior to 1895–96 there had been a marked increase every year over the preceding year. In 1895–96 the new admissions were 4688, while in 1896–97 they dropped down to 4370, and during the past year the number has remained substantially the same, while from the experience of former years an increase might have been expected, both on account of the increase of population and for other reasons which were formerly in operation. This all tends to show that insanity is not on the increase, as is popularly supposed. This has been somewhat hastily assumed to be the case because the increase of the insane has been greater than the increase in the population, people not reflecting that as institutions improved friends were more and more willing to trust their relatives to the care of the State hospitals. The rate of recovery has also increased. In 1895–96 it was 948, in 1896–97 it was 951, while during the past year it gained nearly 10 per cent., 1018. This is really the crucial test of the whole system and shows the advantage of transferring the institutions of the County of New York and King's County to the care of the State. It is quite likely that this rise will continue. It obviously must with better food, better clothing, better medical attendance, and better opportunities for amusement and recreation. Excellent training schools for nurses in State hospitals have been established throughout. All candidates are now obliged to pass a uniform examination on the same day. A graduate of a training school receives a considerable increase in wages and this conduces to the improvement of the service in every way. By this means experienced employés are obtained and the patients reap the benefit.

The Alien Poor sent to their Homes.

The State of New York has an officer devoted to searching out dependent persons who have come to this State from abroad. The following facts are gathered from his annual report. During the fiscal year ending Sept. 30th, 1898, there were removed 214 alien poor to their homes in different countries in Europe. They were found in almshouses, asylums and hospitals, and other charitable institutions in this State, and their condition at the time of landing in this country as brought out by the inquiries was as follows: crippled, 15; epileptic, nine; paralytic, five; aged and infirm, 26; feeble-minded, 54; vagrant and diseased, 43; and otherwise disabled, 62. These had been furnished transportation to this country as follows: by cities, towns, and other municipalities, 18; by benevolent associations, societies, and emigration agencies, 59; by padrones, contractors, corporations, and individuals under agreement to labour, 23; and by relatives, guardians, and friends, 114. By their own statements they were found to have landed as follows: at the port of New York, 192; at other United States ports, 15; and at various Canadian ports, seven. After careful examination these persons were returned to their homes as follows: to England, 33; to Ireland, 21; to Germany, 44; to Austro-Hungary, 55; to Italy, 43; to Russia, nine; to Sweden, three; and to Holland, Switzerland, Scotland, Bulgaria, Denmark, and Norway, each one. The total expenditure of these removals was $5328.26; the average per capita cost, $24.90. Since this Act came into force in 1890 up to Sept. 30th, 1898, there have been 3350 removals made at a total expenditure of $75,322.25, or an average per capita of $22.48.

Alleged Hypnotic Power over a Jury.

Not one of the least sensational features of a recent prosecution in New York City for blackmailing was the alleged hypnotic power of the defendant's wife. According to the newspapers no juror could look her in the eyes and render a fair and impartial verdict. Whether it was that the court really did fear that she would hypnotise the jury or that she was caught ogling the jury and making signs to them the judge as far as possible kept her out of the court-room or required her to take a retired seat so that the baleful influence of her eyes would not be felt. The jurors were unable to agree, but after the trial each juror declared that the woman's eyes did not have the least influence upon him.

Cleansing the City of Havana.

The colossal task of putting every dwelling in the city of Havana into good sanitary condition is progressing. Surgeon-Major Davis has hired 100 resident physicians for house-to-house inspection to compel obedience to the new regulations. All cesspools under houses are to be closed and sealed. Garbage is to be removed daily. It is expected that the city will be in a fair sanitary condition within three months, without underground sewerage. The old residents regard these new health regulations as unnecessary and meddlesome and even some well-to-do and well-informed persons, when making their objections, describe themselves as "healthy enough." To-day 1000 people are engaged in the work of cleansing the streets and public buildings.

Jan. 18th.

Obituary.

EDMUND JOSEPH FURNER, F.R.C.S. ENG., L.S.A.

THE medical profession has lost one of its most venerable members by the death of Mr. E. J. Furner who passed away on Jan. 1st at his residence in Brunswick-square, Brighton. A member of a well-known Sussex family, he was born in Brighton on Dec. 13th, 1805, and there he spent the greater part of his long life. One of his brothers was judge of the Sussex County Court and another brother, Mr. Robert Furner, gave the town a valuable collection of prints which has been named after him. Having chosen the medical profession Mr. Furner studied at St. George's Hospital and the Windmill-street School and qualified himself to practise by becoming L.S.A. in 1828 and M.R.C.S. Eng. in 1829. After a voyage to India as a ship's surgeon he was appointed house surgeon to the Sussex County Hospital, eventually rising to be surgeon, a post which he held for 32 years, and on his resignation of it in 1876 he was presented with an illuminated address by the physicians and surgeons. From that time to the day of his death he was consulting surgeon, so that his connexion with the hospital continued from first to last for nearly 60 years. Mr. Furner was admitted F.R.C.S. Eng. in 1854. In 1836 he published a case of ligature of the external iliac artery for femoral aneurysm and in 1863 a successful case of ligature of both subclavian arteries for axillary aneurysm. Up to the time of the brief illness which ended in his death the deceased retained some degree of activity and his faculties were but little impaired. He was a widower and has left two sons, one of whom is a surgeon to the Sussex County Hospital.

EDWARD NICOLLS CARLESS, M.D., C.M. ABERD., L.F.P.S. GLASG., J.P.

DR. EDWARD NICOLLS CARLESS died at his residence, Lansdowne House, Devizes, last week. The deceased received his medical education at the University of Aberdeen where he graduated M.B. and C.M. in 1871; the same year he also took the qualification of L.F.P.S. Glasg. In 1897 he was admitted M.D. Aberd. Dr. Carless was extremely popular and highly respected in Devizes where he was medical officer of health, consulting surgeon to the Cottage Hospital, surgeon to the prison, and also medical officer of the 1st District of the Devizes Union. The deceased took a great interest in the Volunteer movement and was until recently Surgeon-Lieutenant-Colonel in the 2nd Volunteer Battalion Wilts Regiment. Dr. Carless was a Justice of the Peace for Devizes and had formerly been deputy-coroner fo

the middle division of Wiltshire. He will be greatly missed in Devizes and much sympathy is felt for his widow and children. The funeral which took place on Jan. 28th was largely attended; amongst those present were Mr. C. E. Colston, M.P., Captain Sterne, R.N. (chief constable of Wiltshire), the medical practitioners of Devizes, the mayor and corporation, the Devizes detachment of Volunteers, and other representative bodies.

GEORGE FREDERICK FARR, M.R.C.S. ENG., L.R.C.P. EDIN.

MR. G. F. FARR, of Kennington-road, S.E., who died on Jan. 11th at his residence, Penrhyn Lodge, Twickenham, had been for nearly 40 years in practice in the neighbourhood of Kennington. His medical education was received at Guy's Hospital and in 1859 he took the diploma of the Royal College of Surgeons of England, supplementing it in 1860 by the Licence of the Royal College of Physicians of Edinburgh Mr. Farr was a man widely known and highly esteemed by a large circle of acquaintances and patients. He was a Fellow of the Obstetrical Society of London, a member of the British Medical Association, surgeon to the L Division of the Metropolitan Police, and also surgeon to Scotland Yard. Mr. Farr's death, which occurred somewhat suddenly, was due to cerebral hæmorrhage. He has left a widow, four sons, and three daughters.

JOHN HAYBALL PAUL, M.D. ST. AND., F.R.C.P. EDIN., F.R.C.S. ENG.

THE death is announced of Dr. John Hayball Paul which occurred at his residence, The Terrace, Camberwell, on Jan. 29th. Dr. Paul became a Member of the Royal College of Surgeons of England in 1840 and a Fellow in 1859. In 1854 he graduated as M.D. at the University of St. Andrews, became a Member of the Royal College of Physicians of London in 1859, and a Fellow of the Royal College of Physicians of Edinburgh in 1858. He was for many years treasurer and at the time of his death emeritus treasurer of the Medico-Psychological Association of Great Britain and Ireland. He was appointed treasurer in 1864 and in 1895, as reported in THE LANCET of Oct. 5th of that year, was presented with an illustrated memorial and a silver bowl by Dr. Nicolson, the President, on behalf of the members.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amsterdam:* Dr. A. Klein has been recognised as *privat-docent* of Hygiene.—*Berlin:* Dr. Friedrich August König has been recognised as *privat-docent* of Surgery.—*Buffalo:* Dr. E. H. Long has been appointed Professor of Therapeutics and Materia Medica.—*Giessen:* Dr. Georg Sticker, who went to India in 1897 to study leprosy and the plague epidemic, has been appointed Extraordinary Professor of Medicine. He himself suffered from bubonic plague contracted during the post-mortem examination of a plague patient. Dr. Heinrich Walther has been appointed Extraordinary Professor of Gynæcology.—*Göttingen:* Dr. Schreiber has been recognised as *privat-docent* of Internal Medicine.—*Greifswald:* Dr. August Martin of Berlin has been appointed to the chair of Gynæcology and Midwifery in succession to Dr. Pernice, who is retiring because of failure of health. The new professor is a son of the well-known gynæcologist, Professor Eduard Martin of Jena.—*Heidelberg:* Dr. Otto Cohnheim has been recognised as *privat-docent* of Physiology.—*Kieff:* Dr. Bushulieff has been recognised as *privat-docent* of Internal Medicine.—*Kiel:* Dr. Helferich of Greifswald has been elected to succeed Dr. von Esmarch in the chair of Surgery.—*Lausanne:* Dr. Rabow has been appointed to the chair of Materia Medica and Therapeutics in succession to Dr. Bourget; Dr. A. Combe, *privat-docent* of Pædiatry, has been appointed Extraordinary Professor.—*Leipsic:* Dr. Paessler has been recognised as *privat-docent* of Internal Medicine.—*Marburg:* Dr. Eberhard Nebelthau has been appointed Extraordinary Professor of Physiological Chemistry and Physics.—*New York (Polyclinic):* Dr. Charles H. Chetwood has been appointed Professor of the Surgery of the Genito-urinary Organs.—*Prague (German University):* Dr. Hugo Wiener has been recognised as *privat-docent* of General and Experimental Pathology.—*St. Petersburg (Military Medico-Chirurgical Academy):* Dr. N. Andogski has been recognised as *privat-docent* of Ophthalmology and Dr. V. Levashoff as *privat-docent* of Hygiene.—*San Francisco (Cooper Medical College):* Dr. Wm. Fitch Cheney has been appointed Professor of Medicine and Dr. Emmet Rixford and Dr. Stanley Stillman have become Professors of Surgery.

UNIVERSITY OF CAMBRIDGE.—At a meeting of the trustees of the John Lucas Walker Studentship in Pathology held on Jan. 27th, W. Myers, M.A., M.B., B.C. Cantab., B.Sc. Lond., was elected senior student and E. Sydney St. B. Sladen, M.A., M.D. Cantab., was elected junior student. Dr. Myers is working under Professor Ziegler at Freiburg and Dr. Sladen is working at the Cambridge Laboratory.—The Downing Professor of Medicine (Dr. Bradbury) has appointed as his assistant Mr. I. L. Tuckett, Fellow of Trinity College, in the place of Dr. Marshall, recently elected Professor of Materia Medica at St. Andrews.

JENNER SOCIETY.—At the meeting of the Cirencester Board of Guardians and Rural District Council held on Jan. 16th, it was decided, on the suggestion of the medical officer of health (Dr. F. T. Bond), to request the Local Government Board to sanction the small expense which would be incurred by procuring from the Jenner Society vaccination literature for distribution amongst boards of guardians and their officers.

A BISHOP ON VACCINATION.—The Bishop of Bath and Wells, preaching at Weston-super-Mare on Jan. 15th, remarked that we ought not to be neglectful of our physical welfare and that if we were so foolish as to relinquish vaccination and thereby run the risk of small-pox, could we expect the Divine Power to be put forth to deliver us from that from which our own knowledge should have saved us?

CARDIFF SCHOOL BOARD.—At the meeting of the Cardiff School Board held on Jan. 20th Dr. W. T. Edwards was unanimously elected vice-chairman.

PROPOSED CARDIFF SEAMEN'S HOSPITAL.—In 1897 Lord Bute promised a subscription of £5000 towards the proposed Seamen's Hospital for Cardiff conditionally upon the fund reaching £25,000. Unfortunately up to the present the amount only reaches £7000 and Lord Bute now offers to increase his subscription to £10,000 providing that another £7000 is raised. It is thought that this amount will be raised as such an institution is much needed in a large seaport like Cardiff.

PRESENTATIONS.—The retirement of Mr. Alfred Cooper from the staff of St. Mark's Hospital with which he had been connected for 34 years was not permitted to take place without some recognition by his many friends belonging to the institution. Accordingly on Jan. 25th he was presented, at the house of Mr. Swinford Edwards in Harley-street, with a Chippendale clock and silver cigarette box, subscribed for by some members of the committee of the hospital, his colleagues, and old house surgeons. Upon the clock was a suitable inscription in commemoration of the occasion. Mr. Edwards in making the presentation alluded to the immense amount of human suffering which Mr. Cooper must have relieved during his long term of office and pointed out how much of the financial prosperity of the hospital had been due to Mr. Cooper's influence.—On Saturday last, Mr. J. St. John Murphy, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., of Grange Town, Yorks, on the occasion of his leaving the town after a residence there of twelve months, was entertained at a dinner by his friends and presented with an illuminated address and a gold-mounted walking stick.—At the Assembly Rooms, Cheltenham, on Jan. 23rd, the Mayor (Alderman G. Norman) presented the late mayor, Mr. Richard Rogers, L.D.S. R.C.S.I., with his portrait in oils, a massive silver gilt bowl, together with an illuminated address in an album and a diamond horse-shoe brooch for

MRS. ROGERS. This testimonial, which cost £275, was defrayed by public subscriptions and was presented to Mr. Rogers as a mark of the esteem and respect felt for him and for the excellent manner in which he had performed the duties of mayor for the past three years.—At the Clifton Grand Spa, on Jan. 26th, a complimentary dinner was given to the local executive officers during the visit of the British Association to Bristol last year—Mr. J. W. Arrowsmith, the honorary treasurer, and Mr. Arthur Lee and Dr. Bertram Rogers, the joint honorary secretaries. A presentation of a silver salver was afterwards made to each of these gentlemen.

THE LATE DR. HENRY MARSHALL. — On Jan. 18th, in the presence of a large congregation, Bishop Bromby dedicated a side altar which has been erected by subscription in the Lady Chapel of St. Raphael's Church, Bristol, as a memorial to the late Dr. Henry Marshall of Clifton. The Bishop, in his address, paid an eloquent tribute to the memory of Dr. Marshall whose life and work he held up as a brilliant example.

DINNER TO SURGEON W. J. MAILLARD, R.N., M.D., V.C.—The medical officers of the Mediterranean Fleet entertained Surgeon Maillard to dinner at the Malta Union Club on Jan. 13th, 1899, in honour of his being awarded the Victoria Cross for his brave actions on the recent disturbance at Crete. Commander Vaughan Lewes, D.S.O., and the other officers of H.M.S. *Hazard*, were invited to meet him. About 30 sat down to dinner under the able presidency of Deputy Inspector-General Martin, the proceedings being enlivened by the band of H.M.S. *Revenge*, kindly lent by Rear-Admiral Sir Gerard Noel, K.C.M.G. After the Queen's health had been drunk, the president, in a most eulogistic speech, proposed the health of the "Guest of the evening" and congratulated him upon receiving from Her Majesty the most coveted of honours, the Victoria Cross. Surgeon Maillard, in response, thanked his brother officers for the honour which they had done him and said that he was more than pleased to have done something for the honour of the medical branch of the navy and felt very much their sympathy and appreciation.

LITERARY INTELLIGENCE. — The first number of a new monthly review named *Le Mois Médical* appeared in January; it is published by Messrs. J. B. Baillière et Fils, 19, rue Hautefeuille, Paris. The subscription is one franc for all countries. Messrs. Baillière have also sent us their general catalogue of scientific works (114 pages 8vo.), containing the title, date, price, number of pages, and many indications of the nature of the contents of about 5000 books and pamphlets on medicine, natural science, agriculture, veterinary medicine, physics, chemistry, &c. It is forwarded to any address for 50 centimes, the cost of postage.

MEDICAL MAGISTRATES.—The following gentlemen have been appointed magistrates for the colony of New South Wales:—G. T. C. Adams, M.D. Camb., L.R.C.P., L.R.C.S Edin., L.F.P.S. Glasg., of Melbourne; W. Atterbury, M.D. Irel., M.R.C.S. Eng., of Catherine Hill Bay, N.S.W.; F. W. Kane, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., of Bourke, N.S.W.; W. M. Lyttleton, M.D. Columb., L.R.C.P. Edin., M.R.C.S., of Adelong, N.S.W.; C. S. Bowker, L.R.C.P. Lond., M.R.C.S., of Turmut, N.S.W.; S. C. Watkins, M.R.C.S. Eng., of Manly (Sydney), N.S.W.; and T. N. Wright, L.R.C.P. Lond., M.R.C.S. Eng., of Stroud, N.S.W.—Mr. E. M. Pain, M.B., Ch.M. Syd., of the Prince Alfred Hospital, Sydney, has been appointed a magistrate for the colony of New South Wales.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ANDREW, J. E., L.R.C.P. Edin., M.R.C.S., has been appointed Officer of Health to the city of Hawthorne, Victoria, Australia, vice T. O. F. Alsop.

BAILEY, JOHN GEORGE, M.B., C.M. Edin., has been appointed Senior House Surgeon to the Bury Hospital, Lancashire.

BARNARD, HAROLD L., M.S. Lond., M.B., B.S., F.R.C.S. Eng., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Surgeon to the Metropolitan Hospital and Surgical Tutor to the London Hospital.

BATE, GEORGE PADDOCK, M.D. Brux., L.R.C.P., F.R.C.S. Edin., M.R.C.S., has been appointed Consulting Physician to Queen Adelaide's Dispensary, Bethnal-green-road, N.E., vice W. Munk, deceased.

BATTEN, FREDERICK E., M.A., M.D. Cantab., M.R.C.P. Lond., has been appointed Pathologist to the National Hospital for the Paralysed and Epileptic (Albany Memorial), Bloomsbury, vice Risien Russell, appointed Assistant Physician.

BEILBY, J. H., M.B., C.M. Edin., has been re-appointed Medical Officer to the Bromsgrove Cottage Hospital.

BOWMAN, A. S., M.B., Ch.M. Edin., has been appointed Government Medical Officer and Vaccinator to the District of Singleton, New South Wales, vice R. Reed, resigned.

BRAMWELL, EDWIN, M.B., C.M., has been appointed Junior House Physician to the National Hospital for the Paralysed and Epileptic (Albany Memorial), Bloomsbury, vice J. S. Collier, promoted to the senior post.

CALVERT, F., M.R.C.S., has been re-appointed Honorary Surgeon to the Beverley Dispensary and Cottage Hospital.

CLAPHAM, W. C. S., M.D. Brux., L.R.C.P. Lond., M.R.C.P. Edin., M.R.C.S., has been re-appointed Honorary Physician to the Sheffield Royal Hospital.

CLEMENTS, S. D., L.R.C.P., L.R.C.S., L.F.P.S. Glasg., has been appointed Medical Officer to the Farnley Sanitary District of the Bramley Union.

COATES, R., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Barford Sanitary District of Bedford Union, vice C. Sprigge, resigned.

COOKE, F. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Fifth Sanitary District of the Lexden and Winstree Union.

CRUTCHLEY, E. J. F., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Pathologist and Bacteriologist to the Perth Public Hospital, West Australia.

DAVIDSON, JAMES MACKENZIE, M.B., C.M., has been appointed Honorary Medical Officer in Charge of the x Ray Department, Royal London Ophthalmic Hospital, Moorfields.

DIBBS, W. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Farnham Royal Sanitary District of the Eton Union.

DINGWALL, A., M.B., C.M. Glasg., has been appointed Medical Officer to the Kinsham Sanitary District of the Kington Union.

GAMAN, F. R. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the No. 1 Sanitary District and the Workhouse of the Caistor Union.

GILLIES, S., M.D. Lond., L.R.C.P., M.R.C.S., D.P.H. Camb., has been appointed Honorary Assistant Physician to the Prince Alfred Hospital, Sydney, New South Wales.

HEALY, J. J. S., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Officer of Health to the Shire of Philip Island and Woolamai, Victoria, Australia, vice W. Corry, resigned.

HOPKINS, H. C., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer to the No. 2 Sanitary District of the Bath Union, vice Caleb Barrett, resigned.

INGRAM, A. M., M.B., C.M. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Assistant Medical Officer to the Workhouse of the Birkenhead Union.

JAMES, W. H., M.B. Melb., has been appointed Officer of Health for Marongshire, Victoria, Australia, vice J. C. McKee, resigned.

LAVER, PHILIP G., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer by the Lexden and Winstree Guardians.

LAWSON, W. F. C., M.B., M.S. Edin., has been appointed Government Medical Officer and Vaccinator to the Victoria District, New South Wales.

MORGAN, D. N., L.R.C.P. Lond., M.R.C.S., has been appointed Medical and Vaccination Officer for the Tonyrefail and Gilfach Goch Sanitary District of the Pontypridd Union.

MORRIS, C. D., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer by the Sunbury Urban District Council.

O'DOWD, J. A., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer to the Workhouse of the Parish of Birmingham.

PAIN, E. M., M.B., Ch.M. Syd., has been appointed Medical Superintendent to the Prince Alfred Hospital, Sydney, New South Wales, vice F. J. T. Sawkins, resigned.

PROUDFOOT, FRANK G., M.A. St. And., M.B. and C.M. Edin., has been appointed Examiner in Materia Medica for the degrees of M.B., B.Ch., in the University of St. Andrews.

RAPER, M. H., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer to the Wakering Sanitary District of the Rochford Union.

SCOTT, A. W., M.D. Brux., M.R.C.S., has been re-appointed Medical Officer of Health to the Handsworth Urban Sanitary District.

SCOTT, E. H., M.B., Ch.M. Syd., has been appointed Public Vaccinator to the District of Kumara, New Zealand.

SLATER, HOWARD, L.R.C.P. Lond., M.R.C.S., has been appointed Public Vaccinator to the Mercury Bay District, New Zealand.

TRETHOWAN, WM., M.B., Ch.M. Aberd., has been appointed Honorary Assistant Surgeon to the Public Hospital, Perth, West Australia.

VINES, S., L.S.A., has been appointed Resident Clinical Assistant to the Workhouse and Infirmary of the Parish of Paddington.

WALTER, E. W., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer to the South Shoebury Sanitary District of the Rochford Union.

WASSELL, J. L., M.B. Syd., has been appointed Resident Registrar and Anæsthetist to Prince Alfred Hospital, Sydney, New South Wales.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

COLONIAL OFFICE, London.—Medical Officers for temporary service on the Gold Coast, for one year. Unmarried. Salary at the rate of £350 a year, with quarters, or an allowance in lieu thereof. Also Medical Officers for the West African Frontier Force on the Niger. Apply personally to the Assistant Private Secretary at the Colonial Office.

COUNTY HOSPITAL, RYDE.—House Surgeon. Salary £50 per annum, with board, lodging, &c.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—Senior House Surgeon for not less than two years. Salary £100 per annum, with rooms in the hospital, board, washing, and attendance.

DENTAL HOSPITAL OF LONDON, Leicester-square.—Assistant Dental Surgeon.

HEREFORD GENERAL INFIRMARY.—Assistant House Surgeon and Dispenser for two years; unmarried. Salary £75 per annum, with board, residence, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Surgeon to Out-patients for six months. Salary 25 guineas.

HOSPITAL OF ST. FRANCIS, 145, New Kent-road.—Assistant Physician.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £40 per annum, with board, lodging, and washing.

KENT COUNTY LUNATIC ASYLUM, Barming Heath, near Maidstone.—Fourth Assistant Medical Officer and Pathologist for two years; unmarried. Salary £175 per annum, rising £5 a year, with furnished quarters, attendance, coal, gas, garden produce, and washing. Applications to the Superintendent, Barming Heath Asylum, Maidstone.

LIVERPOOL SCHOOL OF TROPICAL DISEASES IN CONNEXION WITH UNIVERSITY COLLEGE, LIVERPOOL, AND THE LIVERPOOL ROYAL SOUTHERN HOSPITAL.—Lecturer in Tropical Diseases. Salary £250 a year and proportion of students' fees, with the right of private practice, will be granted. Applications to Professor Boyce, University College, Liverpool.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary at the rate of £30 per annum, with board, attendance, and washing.

MORPETH DISPENSARY, Beechfield, Morpeth.—House Surgeon, unmarried. Salary £120 per annum, with furnished rooms, coal, and gas.

NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, London.—Surgeon's Registrar.

NORFOLK AND NORWICH HOSPITAL, Norwich.—Assistant to House Surgeon for six months. Honorarium £20, with board, lodging, and washing.

NORTH LONDON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Mount Vernon, Hampstead.—Resident Medical Officer for one year. Applications to the Secretary, Offices, 41, Fitzroy-square, W.

PARISH OF LAMBETH.—Medical Officer for District No. 6 and also a Medical Officer for District No. 8 of the Parish. Salary for No. 6 District £90 per year and for No. 8 District £80 per year, with extra fees as specified in the Orders of the Poor-law Board, subject to statutory deduction. Applications to the Clerk, Guardians' Offices, Brook-street, Kennington-road, S.E.

ROYAL BERKS HOSPITAL, Reading.—Assistant Medical Officer, for six months. Board, lodging, and washing provided and an honorarium of 10 guineas awarded conditionally.

ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields, E.C. Physician.

ROYAL SURREY COUNTY HOSPITAL, Guildford.—Resident House Surgeon. Salary £30, with board, residence, and laundry. Also Assistant House Surgeon. Salary £30, with board, residence, and laundry.

SHEFFIELD UNION.—Assistant Medical Officer (single or widower), to reside at the Union Workhouse, Fir Vale, Pitsmoor, for twelve months. Salary £100 per annum, with apartments, rations, and other usual allowances. Also Junior Assistant Medical Officer for the Workhouse Infirmary, Fir Vale, Sheffield, for six months, unmarried. Furnished apartments, board, and washing provided. Honorarium of £12 will be granted. Applications to the Clerk to the Guardians, Union Offices, West Bar, Sheffield.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at the rate of £50 per annum, with board, lodging, and washing.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London.—House Surgeon. Salary £50 per annum, with board and lodging.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, London.—Assistant Resident Medical Officer, for four months. Salary at the rate of £50 per annum, with board, residence, and washing.

UNIVERSITY OF ST. ANDREWS.—External Examiner for Graduation in the Subject of Public Health.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon for six months. Board, lodging, and washing provided. Gratuity £20.

Births, Marriages, and Deaths.

BIRTHS.

BRACKENBURY.—On Jan. 27th, at Stapleton-hall-road, Stroud-green, the wife of Henry B. Brackenbury, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

GRIFFITH.—On Jan. 27th, at Park-square, Leeds, the wife of T. Wardrop Griffith, M.D., of a son.

MORRIS.—On Jan. 27th, at Gordon Lodge, Charlton-road, Blackheath, the wife of Clarke Morris, M.R.C.S. Eng., of a son.

WILSON.—On Jan. 28th, at Malvern, Kenley, the wife of Norman O. Wilson, F.R.C.S., of a daughter.

MARRIAGES.

DE LESSERT—ROBBERDS.—On Jan. 25th, at St. Mary's, Arbroath, Alfred Alexander De Lessert, L.D.S., Union-street, Aberdeen, to Amy Caroline, only daughter of the late Rev. Frederick Robberds of Saltford, Somerset.

WALKER—MOORHOUSE.—On Feb. 2nd, at St. Mary's, Crumpsall, Manchester, by Rev. R. Catterall, Rector, assisted by Rev. T. M. Macdonald, Rector of Kersal and Prebendary of Lincoln, Edward J. Walker, B.A., M.D., Manchester, youngest son of the late Rev. John Walker, Dublin, to Emily Henrietta, second daughter of Christopher Moorhouse, Fieldhead, Crumpsall, Manchester.

DEATHS.

CARLESS.—On Jan. 25th, at Devizes, suddenly, Edward Nicolls Carless, M.D., aged 50 years.

CRANE.—On Jan. 25th, at Kensington-court-gardens, Samuel Leonard Crane, C.M.G., M.D.

FISHER.—On Jan. 30th, at his residence, Lowther-terrace, Lytham, Luke Fisher, M.D., aged 59 years.

KNIGHT.—On Jan. 27th, at the Parsonage, Rainham, Kent, John Sladen Knight, M.D., M.R.C.P., aged 75 years.

PAUL.—On Jan. 29th, at The Terrace, Camberwell, John Hayball Paul, aged 83 years.

TILEY.—On Jan. 25th, 1899, at Fleetwood, Lancs., William George Tiley, M.R.C.S., aged 79.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat (2 P.M.).

TUESDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (8th).—St. Bartholomew's (1.30 P.M.), University College, (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (9th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (11th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (6th).—ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (40, Leicester-square).—7 P.M. Council Meeting. 8 P.M. Paper:—Dr. W. Hunter: The Relation of Dental Diseases to General Diseases. Casual Communications:—Mr. L. Matheson: Some Obtundents.—Mr. W. Rushton: An Improved Arm-rest.—Mr. T. Harris: Models showing Suppression of Permanent Teeth.

MEDICAL SOCIETY OF LONDON.—8.30 P.M. **Dr. S. West: Some of the Clinical Aspects of Granular Kidney. (Lettsomian Lecture.)** Lecture I.:—Syllabus: The importance of the disease, as shown by its frequency and its fatality. More often overlooked than diagnosed. The pathological forms. All chronic Interstitial Nephritis is not Granular Kidney. The relation of Granular Kidney to Acute Nephritis must be proved by clinical evidence. The changes in the vessels must be distinguished from Atheroma. The relation of Granular Kidney to Gout and Lead Poisoning. The early recognition important; possible by physical signs only. Hypertrophy of Heart, secondary, but may be caused by Atheroma. Thickened Arteries, common in young; what is its significance? Arterial Tension; peculiarities in Granular Kidney. High tension in the young is important, and may be one of the early signs of Granular Kidney.

SOCIETY OF ARTS.—8 P.M. **Dr. S. Rideal: Bacterial Purification of Sewage. (Cantor Lecture.)**

TUESDAY (7th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—Dr. G. F. Still: Congenital Hypertrophy of the Pylorus.—Mr. S. G. Shattock: Dilatation of the Œsophagus.—Dr. W. S. L. Barlow: Dilatation of the Œsophagus.—Mr. S. Boyd: Alveolar Sarcoma of Rectum.—Dr. Rolleston: Carcinoma of Cardiac Orifice of the Stomach.—Dr. H. M. Fletcher: Adenoma of Brunner's Glands.—Dr. C. D. Green: Umbilicus Polypus.—Dr. F. P. Weber: Diffuse Syphilitic Change in the Liver. Card Specimens:—Dr. E. Cautley (2), Dr. M. Fletcher, Dr. Rolleston: Specimens of Congenital Hypertrophy of the Pylorus.—Dr. L. Barlow: Gastric Carcinoma spreading up the Œsophagus.—Mr. H. B. Hickman: Carcinoma supervening on Gastric Ulcer.—Dr. P. Weber.

WEDNESDAY (8th).—HUNTERIAN SOCIETY.—8 P.M. Annual General Meeting. 8.30 P.M. Sir H. Beevor, Bart.: The Declension of Phthisis. (Annual Oration.)

SOUTH-WEST LONDON MEDICAL SOCIETY (Stanley's, 235, Lavender-hill, Clapham Junction, S.W.).—8 P.M. Dr. C. Arkle: Some Points in the Treatment of Tuberculosis.

THURSDAY (9th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Specimens will be shown by Dr. Bantock, Dr. Jellett, Dr. Snow, and Mr. J. F. Jordan. Papers:—Prof. M. Robson: Complete Removal of the Sac in a Case of Extra-Uterine Gestation.—Dr. M. Lawrie: Notes on a Case of Extra-Uterine Pregnancy.

FRIDAY (10th).—HUNTERIAN SOCIETY.—7 P.M. Annual Dinner at the Café Monico.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. W. G. Spencer: Tuberculous Cavities in the Lungs giving rise to Gaseous Metastatic Abscesses.—Dr. Barlow and Dr. Batten: A Case of Myopathy, with Autopsy, in a Boy of five years (illustrated by microscopical specimens and lantern slides).—Mr. J. R. Lunn: Some Results of Operation for Enlarged Prostate.—Mr. H. Betham Robinson: Hydatid Cysts of the Upper Lobe of the Right Lung and Liver Successfully Removed.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (6th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. L. Hill: Researches on the Influence of Gravity on the Circulation.

ROYAL INSTITUTION OF GREAT BRITAIN.—5 P.M. General Monthly Meeting.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: The Examination of the Thoracic Viscera.

TUESDAY (7th).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—4 P.M. Dr. F. Beach: Cases of General Paralysis of the Insane and Allied Disorders.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Dr. Beevor: On the Actions of Muscles.

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Prof. E. Ray Lankester: The Morphology of the Mollusca.

WEDNESDAY (8th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. L. Hill: Researches on the Influence of Gravity on the Circulation.

EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Dr. W. S. Fenwick: Clinical Demonstration on Vomiting in Infancy and Childhood. (Post-Graduate Course).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Fowler: Influence of other Diseases upon Pulmonary Tuberculosis.

THURSDAY (9th).—CHARING-CROSS HOSPITAL.—4 P.M. Mr. Waterhouse: Demonstration of Surgical Cases. (Post-Graduate Class.)

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Dr. A. Macfadyen: Toxins and Antitoxins.

LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: The Examination of the Thoracic Viscera.

FRIDAY (10th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. L. Hill: Researches on the Influence of Gravity on the Circulation.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1898, which was completed with the issue of Dec. 31st, and the Title-page to the Volume, were given in THE LANCET of Jan. 7th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1898 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 6*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO GOVERN MEDICAL PRACTITIONERS.

"SUBMIT yourself to governors," said that most human and lovable of the apostles, Peter, but he meant to imply by governors duly constituted authority and not irresponsible tyranny or idle arrogance. To give way to either of these is to wrong ourselves and our neighbours. For which reason the following scheme is one that should be strenuously resisted by all the medical practitioners concerned and not only by them but by all the profession of the country who should unanimously declare that for medical men to work upon such a basis is cramping to their science, derogatory to their position, and totally impossible from every point of view.

COPY OF SCHEME INTRODUCED BY JOHN THOMAS, MINERS' AGENT, GARW MINERS' ASSOCIATION.

A Scheme to govern the Medical Practitioners of the Garw Valley, to be called the "Medical Practitioners' Governing Committee."

1.—The committee to be called "The Medical Practitioners' Governing Committee."

2.—The committee shall be constituted of one for every 100 workmen in each colliery involved in the Garw Valley district and shall be appointed by the workmen at a meeting duly called for that purpose.

3.—The duty of the committee shall be to appoint a sufficient number of qualified medical practitioners for the whole district, including Blaengarw, Pontycymmer, Pontyrhyl, Bettws, Coytrehane, Tondu, Brynmennin, and Bryncethin.

4.—To receive all monies kept as poundage at the colliery offices.

5.—To pay the medical practitioners such annual salaries, with or without surgical appliances and drugs, as they think fit.

6.—That the committee shall have power to grant the medical practitioners one month holidays annually, either in the months of July or August, or as may be agreed upon between them.

7.—The committee to have power to appoint qualified Assistants to attend upon the workmen and their families during such holidays.

8.—The committee to pay the medical practitioners their salaries once every three months.

9.—The committee to have full power to deal with any emergency which may arise between them and the medical practitioners engaged by them.

10.—The committee to receive and give three months' notice to terminate all engagements between them and the medical practitioners.

11.—The medical practitioners to *be under the sole control of the Governing Committee* and to devote the whole of their time to attend upon the workmen and their families in all cases of accidents and sickness, including confinements.

12.—They shall render all assistance possible to obtain compensation to all injured workmen.

13.—They shall attend all committee meetings called for the purpose of discussing cases of injury.

14.—The committee shall issue an annual balance sheet, showing the state of the funds.

(1) It was a pretty taste in the author of this scheme to christen it a scheme to "govern the medical practitioners." The persons who subsist on the wages of their fellows and who give them orders to strike, to resume work, or to contribute to other strikes and who generally organise labour—finding perhaps the duties both less onerous and more remunerative than labouring—are apt to drop into a domineering tone; hence we may assume without much fear that the scheme leapt from the brain of a miners' agent.

(2 and 3) With Clauses 2 and 3 we have no fault to find. The miners ought to have a voice in choosing their medical attendant and ought to feel certain that the supply of medical men is adequate, for they require medical services too often not to value them highly.

(4) This clause might at some time possibly conceal a fraud upon both the medical men and the miners. Under it the "governing committee" might charge the men one rate of poundage and pay the practitioner at another and lower rate. The balance thus obtained would have a tendency to be spent in secretarial expenses, as everyone knows who has followed the practices of organisers in the interests of labour.

(5) This clause would regularise such a fraud as is suggested in the preceding clause.

(6) The time for the medical man to take a holiday is when the cases on his hands allow him to do so. And even if this were not the obvious case it is difficult to understand why the person who ministers to the bodily needs of the miners should not be as much a free agent with regard to his holidays as any gentleman who sells them beer or beef. Of course a competent substitute must be provided.

(7) It is not very long since the miners in a Welsh district made a demonstration in favour of an unqualified man who was dismissed by his employer because of the new regulations of the General Medical Council. This committee of laymen, and possibly not of highly educated laymen, must understand that the word "qualified" has a technical meaning. It does not mean a person whom the committee think suitable; but it means a man who possesses certain degrees and diplomas.

(8) On this clause and on Clauses 10 and 14 we make no comment.

(9) Medical men serving under a committee will, of course, take care to be provided with a proper legal agreement in which the duties of the parties towards each other are specified and in which provision is made for settling any disputes. The committee should only have—and, for that matter, should only be found asking for—such discretion as a fair agreement would give them. These remarks also hold good for Clause 11.

If Clauses 12 and 13 mean anything they mean that whenever a miner sees a chance of getting an annuity out of an owner the medical practitioner must help him whatever be the legal and medical merits of the case. Need we say that no self-respecting medical man would subscribe to such a condition and that its proposal stamps the scheme as immoral.

"INDISCRIMINATE MEDICAL CHARITY": A DISCLAIMER.

To the Editors of THE LANCET

SIRS,—My attention has been drawn to an article in THE LANCET in which a whole column is devoted to a lecture written for my special edification. It is really a work of supererogation on your part to fill so much of your valuable space for such a needless purpose, particularly as I have been a regular reader of THE LANCET for over 12 years and have consistently followed its teaching on all matters of professional conduct. Regarding the circular from which you quote and on which your correspondent waxes so eloquent, I was quite oblivious of its existence until Sunday last when I heard of the comments which had been made by you on my want of respect for the dignity of the profession and on inquiry I learned that a circular had been issued setting forth the advantages of the Church Lads' Brigade, an organisation which has been of incalculable benefit to the boys of the district. The gentleman who was responsible for the publication of the circular then told me of its contents and said that a professional brother had objected to its being sent round. Immediately all further issue was stopped and there, it was thought, the matter ended. Indeed, the gentleman in question did not previously think to mention the incident to me, so that you see I was not in any way cognisant of the offending paragraph.

Now respecting your comments, they altogether exaggerate the importance of the matter. Instead of offering free attendance to "all sorts of persons indiscriminately," my connexion with the Brigade merely necessitates the medical supervision of 40 or 50 lads, to which number the company is limited. Then again your advice to me to find out the wages or the income of the lads' parents is quite unnecessary considering that in the majority of cases the lads' parents were known to me professionally before the introduction of the Brigade to this parish. As a matter of fact I have made a charge in all cases where they could afford to pay. I can understand, however, how the impression arose that I made no charge, seeing that in most of the cases the troubles about which I have been consulted arose from decayed teeth and these I have advised the lads either to have extracted or stopped by a dentist without, of course, taking any fee for that advice.

It is gratifying to learn that you exonerate me from any suspicion of unprofessional conduct even on *ex parte* evidence. I cannot help, however, coming to the conclusion that the individual who instigated the correspondence instead of first communicating with me direct was guilty not only of unprofessional conduct, but of a distinctly unfriendly act, and one unworthy of an Englishman and a gentleman. Trusting you will find space for this explanation and thanking you in anticipation,

I am, Sirs, yours faithfully,
R. J. FERGUSON, M.D., M.Ch. R.U.I.

Thornton Heath, Feb. 1st, 1899.

WANTED A SUGGESTION FOR TREATMENT.

To the Editors of THE LANCET.

SIRS,—I should be much obliged if any of your readers could help me in the following case. A lady asks my opinion if anything can be done to prevent her daughter, who is now only 16 years of age and over 5 ft. 10½ in. in height, still going on growing. Her friends have suggested gin as a remedy. Is there any medical or other authority for its use under such circumstances? The young lady is of prepossessing appearance, but her continued growth is looked upon as a calamity.

I am, Sirs, yours faithfully,
Jan. 26th, 1899. W. S.

*** There is no evidence that gin possesses any particularly stunting effect, and to administer it for that purpose would be little short of criminal. The young lady and her friends must reconcile themselves to the stature which nature has granted to her. The only therapeutic measure which has been brought to our attention is contained in "Alice in Wonderland," not a sufficiently serious medical authority.—ED. L.

A QUESTION OF FEES.

To the Editors of THE LANCET.

SIRS,—I would be much obliged for your opinion on the following county-court case. I agreed to attend a Mrs. Glanville in her confinement for the small fee of 10*s.* 6*d.* provided that the fee was paid before attendance. On May 25th last she was attended in her confinement by my assistant, Mr. J. D. E. Williams, a legally qualified practitioner, but the fee was not forthcoming. I accordingly took out a county-court summons against Mr. Glanville for the ordinary confinement fee of 20*s.*, as the fee of 10*s.* 6*d.* had not been paid according to agreement. The hearing took place this morning before Judge French at the Shoreditch County-court and the facts were not disputed, but the judge held that I could not recover *any* fee *as I had not myself attended the woman* and gave judgment for defendant with 5*s.* costs. I may add that there was no neglect

or anything whatever alleged against my assistant's conduct or in his attendance on the case. But the defendant alleged that the reason I did not attend was because I was drunk, which was a deliberate falsehood as I could easily prove it to be, and the judge stated that he did not believe that there was any truth in it. In order to reopen the case I propose to get Mr. Williams when he returns to London—as he left me several months ago—to take out a summons against Mr. Glanville for 20s. either in his own name or in our joint names, as I feel sure the judgment is wrong in point of law. If it is correct then no one can recover fees for services rendered by qualified assistants.

I am, Sirs, yours faithfully,
Pitfield-street, N., Jan. 31st, 1899. CHARLES W. J. DUNLOP.

*** In our opinion the decision is wrong. The principal is the right person to sue for the fees due to him in return for work done by his agent.—ED. L.

"THE STYLE OF PHYSICIAN."

To the Editors of THE LANCET.

SIRS,—The recent ruling as to the title of "physician" has somewhat cleared the air, but the subject of medical titles is still a little misty. The apothecary cannot legally describe himself either as "physician" or "surgeon," and I suppose he must in future be known as "Licentiate in Medicine, Surgery, and Midwifery of the Apothecaries' Society." This seems rather awkward and the natural remedy would seem to be union with the Royal Colleges. We are still in doubt as to the right of the M.D. to use the title of "physician" unless he is associated with one of the Royal Colleges and also whether it is allowable for one who has the legal title of "physician" to use that of "Dr." I believe that at present there is a perfectly honest difference of opinion on these two points which can only be settled by a friendly legal action or by an authoritative ruling by the General Medical Council. I think there are very few medical men who would wilfully assume false titles and it is certainly desirable that the matter should be settled. Perhaps I may venture to remark that I look upon the giving the courtesy title of "Dr." to M.B.'s as inconsistent with the position taken by THE LANCET. Either it is given because the M.B. is a physician in the eye of the law, in which case the diplomate of a physicians' college is also entitled to it, or it is a pure courtesy title which we understood THE LANCET did not approve. Hoping we may soon know where we are,

I am, Sirs, yours faithfully,
Loughborough, Jan. 28th 1899. J. B. PIKE.

To the Editors of THE LANCET.

SIRS,—Now that the case of Hunter *v.* Clare is finally settled would you through the columns of THE LANCET kindly inform us "what an L.S.A. may have inscribed on his plate," because in all fairness to the profession the same objection must hold good to an M.R.C.S., and L.R.C.P., yet at the same time there are hundreds of men with Scotch and Irish qualifications who are allowed to style themselves "Dr.?" As far as my experience goes 99 per cent. of the human race look upon a general practitioner as a man who is capable of dealing with both medical and surgical cases; therefore he is a physician and surgeon and if he be not allowed to describe himself as such will the General Medical Council give a title to all members of the profession who do not hold an M.D., F.R.C.P., or F.R.C.S. degree? There are many men who from love of the profession have started as unqualified assistants and have worked hard and paid their own fees, &c., in order to get qualified and at the same time know their work quite as well as men holding the highest degrees it is possible to obtain. I have on more than one occasion in the States amputated and operated for strangulated hernia with only a miner to give chloroform, yet at the same time, being only an L.S.A., I, according to the late decision, am not allowed to call myself "physician and surgeon."—I am, Sirs, yours faithfully,
Jan. 30th, 1899. AN L.S.A.

SALINE RNEMA IN HÆMORRHAGE.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 21st, p. 190, Mr. Gabriel asks if saline enemas have been used in typhoid hæmorrhage. A large number of cases are noted in Sections 152: 4 of the Medical Digest and Appendix where the effects of such treatment were most beneficial in hæmorrhagic collapse from various causes.

I am, Sirs, yours faithfully,
Finchley-road, Hampstead, N.W. RICHARD NEALE, M.D. Lond.

A DISCLAIMER.

To the Editors of THE LANCET.

SIRS,—My attention has been called to an article in the *Daily Mail* in which my name is mentioned. I can only say that this has been done absolutely without my knowledge or sanction either direct or indirect.

I am, Sirs, yours faithfully,
W. S. HEDLEY.
Mansfield-street, Portland-place, W., Jan. 31st, 1899.

WANTED A HOME.

A CORRESPONDENT writes to inquire if any of our readers can put him in communication with someone who will receive in an institution or suitable home a young man, aged 22 years, suffering from St. Vitus's dance. The terms must be moderate.

UNSEEMLY PRACTICES.

To the Editors of THE LANCET.

SIRS,—X has a practice in the suburb of A, where he also holds a medical aid appointment. He accepts a similar appointment in another suburb of A (which has been refused by the medical men in that district), starts a branch practice there, works it for a year, then sells it to Y, who carries on the practice on the same lines as X—viz., by touts importuning weekly from door to door irrespectively of refusal and whether a medical man is in immediate attendance. This weekly canvas goes on to join Doctor Y's club. Is not such conduct a gross breach of professional etiquette on the part of X and Y? Cannot the General Medical Council legislate in such cases if brought to their notice? The legal profession has its remedies, why should not we? Bakers and butchers are above door-to-door soliciting and underselling. I think it time a move were made—more so now, as the next meeting of the General Medical Council intends dealing with the question of medical aids in general—and Mr. Victor Horsley appealed to, who before his election promised us his support in this direction.

I am, Sirs, yours faithfully,
Jan. 28th, 1899. SPES.

*** The behaviour of X and Y as reported by our correspondent is unprofessional, but the General Medical Council has at present no power to "legislate," and we doubt whether the proceedings of X and Y would be considered "infamous in a professional respect."—ED. L.

"WANTED A 'WEIR-MITCHELL INSTITUTION.'"

To the Editors of THE LANCET.

SIRS,—If "Nemo," writing in THE LANCET of Jan. 28th, will communicate with me stating the nature of the case and the amount of outlay desired I think I can help him.

I am, Sirs, yours faithfully,
J. LIONEL STRETTON.
27, Church-street, Kidderminster, Jan. 30th, 1899.

To the Editors of THE LANCET.

SIRS,—In answer to "Nemo" in THE LANCET of Jan. 28th, p. 277, I can say that Dr. A. S. Eccles has such an institution in his own house. I have been myself under his care with the best results for the consequences of overwork.

I am, Sirs, yours faithfully,
Geneva, Jan. 30th, 1899. A. CORDES, M.D.

Oculus.—Mr. F. Davidson, 20, Great Portland-street, sells a good little book under the inelegant title "Sight-testing for the G. P.," which covers the ground suggested.

Sebaceous.—We have no record of the composition of the article in question.

R. J.—We recommend application to the Dean of the Medical School.

Auctor.—We certainly do not consider such a book to be needed.

J. W. W.—Sulphate of soda, quinine, and iron.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 2nd, 1899.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Jan. 27	30·43	E.	...	62	44	35	35	36	Hazy
,, 28	30·27	N.E.	0·03	59	42	33	34	35	Hazy
,, 29	30·11	N.E.	0·16	46	43	35	39	40	Raining
,, 30	29·90	N.E.	0·01	53	45	40	40	41	Raining
,, 31	29·71	N.E.	...	44	41	34	36	37	Overcast
Feb. 1	29·47	W.	...	47	43	37	37	39	Overcast
,, 2	29·44	N.E.	...	44	38	32	32	34	Cloudy

During the week marked copies of the following newspapers have been received: *Sunderland Echo, Glasgow Evening News, Darlington Echo, The Newcastle Daily Leader, Bicester Herald, Barry Herald, Architect, Chester Chronicle, Glasgow Daily Record, Haverhill Echo, Builder, Times of India, Pioneer Mail, The Derbyshire Times, Scotsman, Citizen, Kendal News, Literary Digest, Liverpool Daily Post, Fife News, Bristol Mercury, Brighton Gazette, Yorkshire Post, Sanitary Record, Leeds Mercury, Mining Journal, Hertfordshire Mercury, Public Health, Engineer, Local Government Chronicle, St. Bartholomew's Hospital Journal, Ardrossan and Saltcoats Herald, City Press, Surrey Advertiser, Local Government Journal, Lincoln Gazette, Lincolnshire Echo, Australasian Medical Gazette, Taunton Echo, Weekly Free Press and Aberdeen Herald, Glasgow Herald, Midland Daily Telegraph, East London Advertiser, Cambridge Weekly Guardian, Fleetwood Express, St. Helen's Reporter, Admiralty and Horse Guards' Gazette, Northern Echo, Devon and Exeter Daily Gazette, Lancaster Guardian, &c., &c.*

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